BANNACK MINING DISTRICT PROJECT

DSL - AMRB No. 91-007

FINAL REPORT

Beaverhead County, Montana

MONTANA
ABANDONED MINE
RECLAMATION BUREAU

June 15th, 1992

SPECTRUM ENGINEERING

Billings, Montana

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FINAL REPORT

BANNACK MINING DISTRICT PROJECT

DSL - AMRB No. 91-007

Beaverhead County, Montana

Located in Southwestern Montana

in T8S, R11W, Sections 5, 7, 8, 9, & 16

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1. INTRODUCTION

1.1 Site Descriptions

The project area was situated near Bannack State Park in Beaverhead County. This area is shown on the 7½ minute USGS quadrangle named Bannack in T8S, R11W, Sections 5, 7, 8, 9, and 16. It can be easily reached by proceeding south on Interstate 15 from Dillon for about 4 miles to the Bannack State Park exit. You then proceed on paved State Highway 278 approximately 20 miles to the Bannack State Park access road. From here it is about a mile to the Park entrance. Before reaching the Bannack Townsite, turn right on to the road crossing Grasshopper Creek. This road takes you around the townsite and leads to mine access roads on both sides of Grasshopper Creek. Both mine access roads start at locked gates. For additional information on location and access, the reader is referred to the maps in Section 1.2.

The project addresses numerous mine openings which were related to the recovery and exploration of gold and associated metals. Some of the openings were situated on placer ground which was mined by underground methods. However most of the openings resulted from past hard rock mining activities. For information on the history and cultural resources of the project area please refer to *Cultural Resource and Assessment of the Bannack Mining District - GCM 1991* authored by Paul Anderson.

Portions of the Bannack Mining District had been inventoried in 1983 and in 1987. In response to these inventories a number of the hazardous openings in the project area were addressed by various closure techniques during AMRB Projects: Phase 8, Phase 21, and Phase 22. In 1990-1991 the project area was reexamined and the inventory was expanded. The project designed from this inventory included many of the sites which had been previously addressed with temporary closure techniques.

During the project a mining operation controlled by Robert L. Towner continued to remine placer deposits and reprocess hard rock mine dumps in the general project area. This recent mining activity has been confined to surface operations and did not create or utilize any of the mine openings included in the Bannack Mining District Project. The project strictly avoided all areas that might be reclaimed or utilized by mine operations in the foreseeable future.

1.1.1 Hand Placer Site

The Hand Placer Site was located in the SE¼SW¼SW¼ Section 5 and in the NE¼NW¼NW¼ Section 8, T8S, R11W. It was situated east of Bannack at the base of the first jeep trail which branches off the access road running along the north side of Grasshopper Creek. The site consisted of nine openings.

1. DM 1 - A 13 foot deep shaft located 15 feet off the west side of the trail.

2. DM 2 - A 31 foot deep, 4 foot by 5 foot shaft that was lined with timbers. It was located on the west side of the road about 100 feet north of DM 1 and

further up the hillside. A large dump and a 6 foot deep pit were associated with this opening.

3. DM 3 - A practically blocked adit that was located on the southeast facing slope 150 feet north of DM 2. Several dumps were on the slope below the adit. The terrain between the road and this opening provided difficult access.

4. DM 4 - A 6 foot by 6 foot shaft that had been sunk 7 feet into solid rock. This opening was above DM 3 and about 100 feet to the north.

5. DM 17 A & B - These horizontal 4 foot by 4½ foot and 5 foot by 3 foot openings led to underground placer workings. Both openings were situated at the base of an 11 foot high cut which was on a bench 10 feet above the main access road. The jeep trail passes within 120 feet of the openings.

6. DM 17 C, D, & E - These openings were located on the hillside above and 60-150 feet east of DM 17 A & B. They had all been driven through placer gravel and had caved to some extent.

The openings at DM 1 and DM 2 were enclosed by fences installed in 1984 by AMRB Phase 8.

1.1.2 Southwest Section 5 Site

The Southwest Section 5 Site was located in the SW¼ Section 5, T8S, R11W. The project addressed openings that were on both sides of a jeep trail which travels up the drainage bottom. This jeep trail branches off the access road on the north side of Grasshopper Creek about one-fourth mile east of Bannack. The site consisted of the following openings:

1. DM 5 - Located 0.2 miles up the jeep trail in a minor drainage on the west side of the trail. This 5 foot by 6 foot adit and its dump were perched above a rock ledge about 100 feet off the trail. The entrance was partially blocked by a pile of rubble which extended about 8 feet into the opening.

2. DM 6 - Located high on the nose of a little north-south trending ridge. This 36 foot deep shaft and its dump were situated about 500 feet (horizontally) northwest of the road and around 200 feet higher in elevation. The hillside below the opening exceeded a 2H:1V slope.

3. DM 7 - Located over one-fourth mile up a drainage on the west side of the jeep trail. The trail crosses this drainage about 0.4 miles from the main access road. DM 7 consisted of a dump, 30 feet of trench that got up to 7 feet deep, a 6¼ foot by 7 foot by 5 foot wood structure which sat underground at the end of the trench, and 14 feet of 5 foot by 7 foot shaft below the wood structure.

4. DM 8 - This group of three openings was located in the drainage halfway between DM 7 and the jeep trail. Several of the dumps toe out in the narrow drainage bottom. Opening A was situated on the south facing slope 20 to 30 feet above the other openings. It was a 15 foot deep incline that was 3 to 7 feet wide and up to 6 feet high. Opening B was surrounded by waste dumps and was the lowest of the adits. It was 21 feet long and 5 foot by 5 foot inside. The entrance was restricted to a 3 foot by 3 foot opening. Opening C was situated near the drainage channel. It had been driven 50 feet before drifting to the northeast and developing into a large stope. The adit was 6 to 9 feet high and 5 to 7 feet wide. There were dumps above it and in front of it.

5. DM 9 - Located in a branch of the drainage which is west of the previously described openings. The large dump could easily be seen standing out on the hillside when you looked due west from the top of the ridge near DM 6. Access to this site had not been developed. The opening at DM 9 was a 30 foot deep inclined shaft (nearly vertical). It was roughly 5½ feet square.

6. DM 10 - Located 900 feet south of DM 9 and in the same drainage as DM 9. It was situated near the top of a north-south trending ridge but on the east facing slope. The jeep trail that provided general access to the Southwest Section 5 Site is in the next drainage to the east. This vertical opening was 17 feet deep, 6 foot by 13 foot at the collar and 7 foot square at the bottom.

7. DM 11 - Located one-half mile up the jeep trail from its junction with the access road along Grasshopper Creek. The four openings at this site were all easily accessible from the road which was only around 100 feet away. DM 11 consisted of a 5 foot deep pit; a 7 foot deep pit; a collapsed adit depression that is 6 to 10 feet deep and 40 feet long; and, a cut leading to a 9 foot by 9 foot by 3 foot underground void. Large sagebrush covered the site and a large dump sat in front of these features.

8. DM 12 - Located on the northeast fork of the jeep trail. The opening was situated in a limestone outcrop at the top of the ridge which is crossed by this branch of the trail. A trail led right to the base of the dump at DM 12. This opening is 10 feet high and 6 feet wide. Inside, the opening bifurcated with both branches leading to extensive and potentially hazardous workings. Within 25 feet of the portal there was a very dangerous vertical drop in the left drift.

9. DM 13 - Located on top of the ridge which is across the road (northwest) from DM 11. It was approximately 450 feet off the trail and perhaps 100 feet higher in elevation. The opening at DM 13 was a 21 foot vertical shaft that was 9 foot by 11 foot at the collar but gradually decreased to 4 foot by 4 foot at the bottom where there was a caved drift. The opening was full of loose timbers.

10. DM 14 - Located directly below DM 12. This opening was just above the elevation of the road. A little ramp traveled from the road up to the top of its dump. DM 14 was a 4½ foot wide by 5½ foot high adit that was heavily timbered and appeared to be very extensive. The adit had caved back about

fifteen feet from the portal. The ground above the adit consisted of decomposed rock or weakly cemented colluvium. Caving had undercut the slope for an additional 15 feet. The gentle slope above the adit was covered with trees. The ruins of a cabin sit at the far edge of the large dump.

1.1.3 East Half Section 5 Site

The East Half Section 5 Site was located in the E½ Section 5, T8S, R11W. The site consisted of three short mine adits:

1. DM 15 - A 29 foot long irregularly shaped adit that had been driven into massive limestone. It was situated on the south side of a small canyon in the NE¼ Section 5. The opening could be reached by walking 900 feet up the drainage bottom from the end of an established jeep trail.

2. DM 16 - A 56 foot long adit that wound through a mineralized zone in massive limestone. It was situated near the toe of the dump associated with DM 15; but, it was on the opposite side of the drainage and only about 6 foot above the elevation of the drainage bottom.

3. DM 19 - A 27 foot long adit located in the SW¼SE¼ Section 5. It was situated on a moderate slope, less than 100 feet from an established road. A completely caved shaft and its dump were located between DM 19 and the road.

1.1.4 Bluegrass Site

The Bluegrass Site sat on a northeast-southwest trending ridge located in SW¼SE¼ and SE¼SW¼ Section 5, T8S, R11W. The series of shafts, stopes, pits, and adits extended from the top of the ridge to the drainage bottom. Four-wheel drive vehicles could easily reach the top of the ridge and the lower Bluegrass openings via an established road. All of the major openings had been fenced in 1984 during AMRB Phase 8. The Bluegrass Site consisted of the following openings and their associated dumps:

1. DM 25, DM 26, DM 27, DM 28, DM 30 - Minor openings each requiring less than 25 cubic yards of backfill. DM 25 and DM 28 were situated on the ridge line. The remaining openings ran in a line along the southeast face of the ridge at a fairly common elevation.

2. DM 29 - A 7 foot by 8 foot shaft that was 19 feet deep sat on top of the ridge.

3. Shaft 1 - A 5 foot by 4 foot timber lined shaft that was 55 feet deep.

4. Shaft 2 - A 6 foot by 7½ foot shaft, 58 feet deep.

5. Shaft 3 - A 6 foot by 10 foot shaft, 38 feet deep.

6. Shaft 4 - A 61 feet deep shaft up to 18 foot by 22 foot at the collar, but nominally 8 feet by 8 feet.

7. Shaft 5 - A 6 foot by 6½ foot shaft with collar dimensions of 13 foot by 14 foot and a depth of 22 feet.

8. Shaft 6 - Located in the drainage channel with no apparent dump nearby. This shaft had a surface opening of 21 foot by 23 foot but narrowed to a nominal 9 foot by 10 foot size. It was 75 feet deep.

9. Opening A - A minor pit requiring about 30 cubic yards of backfill. It was located on the ridge line directly above Opening B.

10. Opening B - A large caved stope with steep walls that were up to 40 feet high. The opening was 100 feet long by 20 to 40 feet wide.

11. Opening C - A 23 foot deep vertical opening that connected at the bottom with Opening D. This opening was 10 foot by 10 foot at the surface, but expanded with some drifting at the bottom.

12. Opening D - This 15 foot wide by 30 foot long trench connected with Opening C.

13. Openings E and F - Were 20 to 30 feet diameter pits.

1.1.5 Gold Bug Site

The Gold Bug Site was located 3/4 mile due east of Bannack, encompassing an area around the quarter corner between Sections 5 and 8, T8S, R11W. All of the openings were situated within a draw between the elevations of 5850 feet and 6100 feet. Access to the site was via dirt roads by driving east from Bannack along the north side of Grasshopper Creek. However, many of the openings were on a steep southeasterly facing hillside, well above developed access. The Gold Bug consisted of the following openings:

1. DM 31 - An 8 foot by 8 foot shaft that was 15 feet deep. This shaft was located on the nose of the ridge and had an ample dump associated with it. Equipment access could be gained by traveling up the nose of the ridge approximately 500 feet.

2. DM 32, 33, & 34 - Required no action. They are relatively stable, shallow inclined openings. The surface owner wanted them preserved due to the crystal formations which they expose.

3. DM 35 - Consisted of a large cut with a 20 foot vertical highwall and extensive underground workings which could be accessed through a sloped opening at the base of the highwall. Dumps associated with this opening extend down the hillside to the road below.

4. DM 36 A & B - Consisted of a 4 foot by 6 foot adit, a 6 foot by 6 foot stope, and a 6 foot by 4 foot stope. The stopes break out at the surface and were at least 20 foot deep. The dump associated with these openings had been remined and only a small remanent was on site. These openings were at least 300 feet from any developed access.

5. DM 37 - A 6 foot by 7 foot shaft that was 18 feet deep. A large dump was associated with this opening. This opening was located 60 feet from DM 36, and was about 15 feet higher in elevation.

6. DM 38 - A 12 foot by 15 foot inclined opening that was 20 feet deep. A small dump was associated with this opening. DM 38 was approximately 50 feet southeast of DM 36.

7. DM 39 - A 6 foot by 4 foot adit that was located near the toe of the dump associated with DM 35. The 14 foot wide trench in which the portal was located began at the edge of a developed access road. The road crossed between the associated dump and the opening.

8. DM 40 - A 12 foot deep cone-shaped vertical opening that had a 20-25 foot diameter collar. A dump was situated on the downhill edge of the opening. The opening was 200 feet from the nearest road and below the toe of the dump at DM 39.

9. DM 41 - Consisted of three vertical openings which were each less than 10 feet deep. Two of the openings drifted underground and interconnected. The site was located 40 feet from DM 40. The slope below DM 41 had been regraded as part of recent mining activity.

10. DM 42 - A 5 foot by 6 foot adit that proceeds underground for a considerable distance. The portal area is heavily timbered; however, there is a large roof fall 15 foot from the portal. The caving appears to extend to within a few feet of the surface. The portal is situated in a depression below DM 43. No action was proposed for this opening because the landowner stated that it would probably be utilized in his future mining activities.

11. DM 43 - Consisted of two vertical openings which had been sunk in the base of a 40 foot by 20 foot wedge-shaped notch which had been cut in solid rock. The highwall on the notch was approximately 20 feet high. The vertical openings were about 40 feet deep. Access had been developed to the dump below this site. The shafts were enclosed in a fence which had been installed during AMRB Phase 8.

12. DM 44 - An 18 foot by 16 foot by 18 foot deep cavity that could be accessed through a vertical opening at the top, a sloped opening just below the top, and a horizontal opening near the bottom. Openings located in the floor of the cavity continued underground. The cavity was situated 40 feet from the highwall at DM 43. It was, however, 30 to 50 feet vertically above the collar elevation of the shaft at DM 43.

13. DM 45 - A 40 foot deep shaft with an irregular shape. The shaft had been sunk in rock and was in a surface cut 40 feet west of DM 44. This shaft had a drift extending out from one side and might also have had openings at the bottom which continue further underground. Near the surface, the shaft is up to 16 feet wide. The shaft did not have a dump near it.

14. DM 46 - This 20 foot deep inclined opening was located right at the end of the access road. It was about 10 feet above the road.

15. DM 47 - A 4½ foot by 4 foot tunnel that extends 14 feet in solid rock. It is only 2-3 feet below the surface. It is situated 30 feet northeast of DM 46. At the landowner's request, this site was not disturbed.

16. DM 48 - A 6 foot by 6 foot shaft that was 41 feet deep. This opening was located 350 feet up the drainage from the end of the established road. It was situated in a fenced enclosure at the head of a little branch of the main drainage. The fence had been erected in 1984 during AMRB Phase 8.

17. DM 49 - A 5 foot by 10 foot shaft that was 45 feet deep. This fenced opening was located on a hillside 100 feet south of the end of the access road. A cut associated with recent mining activity was situated just below the dump at this site. The fence had been erected in 1984 during AMRB Phase 8.

18. A small pit associated with recent mining is located below the other sites and is situated near the drainage bottom.

1.1.6 Washington Site

The Washington Site was situated in a small drainage located primarily in the NW¼NE¼ Section 5 but extending into the eastern edge of the NE¼NW¼ Section 5, T8S, R11W. There were four openings:

1. Washington Shaft A - An 11½ foot diameter, 38 foot deep vertical opening in placer gravel. This opening was located along the eastern edge of NE¼NW¼ Section 5. Reclamation from recent mining activity extended below the shaft and around the west side. Shaft A had an intact concrete collar with a 10 foot by 7 foot rectangular opening. The shaft was in a barbed wire enclosure which had been erected during AMRB Phase 22. The fence was partially down along one side. There was excellent four-wheel drive access to within a few feet of the shaft. The fence was equipped with a gate.

2. Washington Shaft B - This cone-shaped vertical opening was 13 feet in diameter at the surface and was 18 feet deep. There was a large pile of loose material adjacent to it. Shaft B was located in the same fenced enclosure as Shaft A.

3. DM 63 - This 4 to 6 foot wide by 7 foot high horizontal opening had been driven 24 feet into solid limestone. A dump with minus 12 inch rock was associated with the opening. This opening was located on the southwest facing slope of the draw and was about half way up the slope. An established road crosses the base of the draw, however; the terrain beyond the road becomes very steep and difficult.

4. DM 64 - This 6 foot deep vertical opening was about 9 foot by 9 foot at the surface and 5 foot by 5 foot at the bottom. The opening was located less than 100 feet from DM 63 and was straight uphill from it.

1.1.7 Pioneer Site

The Pioneer Site was located in the NE¼NW¼ Section 8, T8S, R11W. The adit at this site was situated in a clay bank which was almost totally surrounded by recently reclaimed placers. The site could be accessed by driving down the road which runs along the north side of Grasshopper Creek. About ¼ mile east of Bannack, this road begins to cross the reclaimed placers. Final access to the opening required crossing through approximately 200 feet of the reclaimed area.

The Pioneer Adit (DM 24) had been driven through placer gravel and ultimately connected with a fenced shaft several hundred feet away. The adit was heavily timbered and lagged throughout; but, there was some buckling. The entrance was nearly blocked by material which has run down from the bank. This loose material sloped 8 feet into the adit and extended several feet above the elevation of the roof. Inside, the adit was 5 feet wide and 7 feet high; but, the timbering reduced the effective size of the opening. The shaft was considered to be active since it was being periodically used for exploration activities.

1.1.8 Senator Site

The Senator Site was located near the northern section corner between Sections 7 and 8, T8S, R11W. The site consisted of three hazardous mine openings:

1. DM 20 - An extensive 7½ foot wide by 7 foot high mine adit located in the NW¼NW¼ of Section 8. This opening was easily accessed via a rough road which crosses old placer workings on the south side of Grasshopper Creek. For an undetermined distance in from the portal, the adit was heavily timbered providing some structural support for the ground.

2. DM 21 - A 31 foot shaft located in the NW¼NW¼ Section 8. This opening was situated in a minor drainage channel and was near the edge of the main access road. This opening was enclose in a fence erected by a previous AMRB project.

3. DM 22 - A 25 foot long adit located in the NE¼NE¼ Section 7. This opening was situated about 40 feet off the side of the mine access road with a trench leading from the edge of the road to the opening.

1.1.9 Golden Leaf Site

The Golden Leaf Site was located in the W½NW¼ Section 8, and extended a few hundred feet west into the E½NE¼ Section 7, which are both in T8S, R11W. The site was a half mile southeast of Bannack on the east facing slope above the Pricilla Mine. The openings were generally accessible to within 200 feet via the numerous roads and trails which cut across this slope. The landowner, Rob Towner, considered all dumps on the southwest side of Grasshopper Creek, except those at DM 50 and DM 54, to have economic potential. The openings included within the Golden Leaf were as follows:

1. Golden Leaf Mine - A heavily timbered 5½ foot wide by 6 foot high adit, that is very extensive. This opening is situated between upper and lower branches of the mine area access road. The trench in which the portal was located extended from its crest to toe almost 80 feet from one road to the other. Within the trench the timbers along the roof of the adit were either exposed or were only under 2 feet of material for a distance of 30 feet.

2. DM 50 - This vertical opening was located on the south facing slope of the little knoll northwest of the Pricilla Mine. An existing road follows the drainage channel from the saddle on the west side of the knoll down to the old Pricilla Mill Site. The opening was only 50 feet off the side of the road but was about 20 feet higher in elevation. The shaft was 45 feet deep, sunk 10 feet by 5 feet. The collar had sloughed somewhat leaving a 15 foot by 15 foot conical opening at ground level. The opening had been fenced during AMRB Phase 8.

3. Manway Complex - This area was located approximately 250 feet north-northeast of the Golden Leaf Mine and was above the mine area access road. However, it was easily accessible. A 4 foot by 4 foot structure sits in this area. There was a hatch in the bottom of this structure which provided access to an underground void having an estimated area of 40 feet by 70 feet. This area was below only 4 feet by 5 feet of surface cover consisting of weakly cemented gravel. The average height of the void was estimated to be less than 5 feet. Openings extended up to the surface from this void in several areas.

4. DM 54 - Located on the ridge top, it was 100 feet northwest of DM 61. It was about 200 feet from the nearest road. This opening was an inclined shaft

that extends down about 19 feet. At the surface, the opening was 12 foot by 12 foot; but, these dimensions decreased to 6 foot by 6 foot near the bottom.

5. DM 55 - Located 500 feet southwest of the lower fenced crater. Several roads or trails which branch off the middle road at the Wallace Mine lead to this site.

   DM 55 consists of a large elliptical (74 foot by 47 foot) crater and an 8 foot by 20 foot shaft that connects with the crater at a depth of 40 feet. The sides of the crater are nearly vertical and vary from 37 feet to 77 feet deep. The shaft is located about 25 feet south of the upper edge of the crater. The openings are enclosed in a barbed wire fence which had been built during AMRB Phase 8. The crater covers a surface area of approximately 3,000 square feet and has a 200 foot perimeter.

   A hazard abatement design was proposed for DM 55; but, landowner requested that no further action should be taken.

6. DM 56 - Located 50 feet uphill from DM 57 and below an upper road. This 27 foot long inclined opening was 5 feet wide and averaged 5½ feet in height. The first 10 feet of the roof was under less than 6 feet of cover.

7. DM 57 - Located 150 feet west of the Manway Complex. The toe of its dump has been excavated by a road cut. Only the top of the adit was exposed in a 20 foot long trench that get up to 7 feet deep at the portal. Another dump associated with a completely caved opening was situated above the trench.

8. DM 58 - Located across the drainage and north of DM 59 and the fenced crater. A trail runs west from the mine area access road to the dump associated with this site. DM 58 consisted of a 35 foot deep wood lined shaft and a 7½ foot diameter by 4 foot deep depression downhill and about 10 feet from the shaft. The shaft was enclosed in a fence erect in 1984 during AMRB Phase 8.

9. DM 59 - Located 250 feet north of DM 57 and just below the fenced crater on the nose of the ridge. This depression was 30 feet long and up to 18 feet wide. At the 5 feet deep end of the depression, a small opening sloped into the ground. The depression was associated with the collapsed outer portion of an abandoned adit. A large dump was associated with this opening.

10. DM 60 - Located in NE¼SE¼ Section 7. It could be accessed by driving up the mine area access road to the Hillside Site, then switching back at the toe of the Hillside and climbing up to the Wallace. The middle road at the Wallace leads to a branch of the road that heads due north. The dump at DM 60 toes out on this road. Above the dump there was about 30 feet of trench leading to a partially blocked adit. Measured along its roof, the adit was 19 feet long. It was 7 feet high and 5 feet wide with 4 feet of drifting at the end. There was 4 to 10 feet of cover over the adit. This material appeared to be a combination of limestone and recemented colluvium.

11. DM 61 - Located 80 feet uphill from DM 62 and approximately 200 feet from the nearest road. DM 61 was a nearly circular (23 foot by 27 foot) crater that varied from 20 to 35 feet in depth. The sides of the crater were nearly vertical. The opening covered a surface area of 490 square feet.

12. DM 62 - Located uphill from DM 60 and 60 feet to the northwest. This opening was a 6 feet by 4 feet raise that continues down to some depth with intermediate wood decks and ladders. The upper 10 feet of the raise assumed a goose-neck configuration. The collar was 6 foot by 6 foot and was situated in solid limestone.

13. Pricilla Mine - Located across from DM 50. Extensive workings can be accessed through this horizontal opening. The adit was recently used for exploration and was considered active.

14. Lower Crater - Located in SW¼NW¼NW¼ Section 8. This large subsidence feature had already been fenced by a previous AMR project. Old mine workings are exposed in the walls of this opening. An inclined drift near the bottom of the crater provides access to underground workings. Visitors can easily descend to the bottom of the crater after climbing over the fence. The landowner did not desire to have any further action taken at this site. We believed that the Lower Crater could be developed for visitation at some time in the future.

1.1.10 Hillside Site

The Hillside Site was located in the NW¼SW¼ Section 8, T8S, R11W. The site consisted of a large waste dump and an extensive 5½ foot by 6½ foot adit. The first 27 feet of the adit was partially exposed in a wedge-shaped excavation. Here the adit had been heavily timbered and lagged on the top and sides shoring up the walls of the excavation. At its headwall the excavation was approximately 20 feet wide across its crest and was 20 feet deep to the adit floor. The excavation which was in unconsolidated material was approximately 55 feet in length. The site and opening were easily accessible via an established dirt road from Bannack.

1.1.11 Wadams Site

The Wadams Site was located near the top of the major north-south trending ridge in the NE¼SE¼ Section 7, T8S, R11W. There were two groups of openings which could be accessed by traveling southeast from Bannack and then up a developed access road which cuts along the ridge. Three sharp switch-back curves had to be negotiated as you climb the ridge past the Hillside Site.

DM 52 - Openings in the hillside which provided access to several inclined and vertical underground excavations. One opening was filled with timbers which partially

concealed the mine hazards. The openings were situated at the end of the last switch-back curve on the access road. They were perched at the top of a dump which had been cut by the access road.

DM 53 - Consisted of a group of openings in a 100 foot by 200 foot area which was around 500 feet up the road from DM 52. A large dump was associated with this site. A rough trail switches back along the face of the dump providing equipment access to the openings, which were along the walls of a surface excavation. The openings included:

1. Two short adits within pit-like depressions. These were designated openings C and D.

2. A large stope with square-set timbers. This was designated opening A.

3. A 20 foot deep raise which breaks to the surface at the top of the cut. This was designated opening B.

4. Several openings were exposed along the base of the highwall. These were collectively designated exposed stope E.

The openings at DM 53 were enclosed in a large fenced area. The fence had been erected during AMRB Phase 22.

1.1.12 French Site

The French Site was located in the SW¼SW¼ Section 8, T8S, R11W. Four shallow shafts or pits were grouped in a 200 foot by 100 foot area on a saddle between the north-south trending ridge and a secondary ridge which juts out to the northeast. The vertical openings were all between 6 and 15 feet in depth. Some have drifts or slopes associated with them. An established road travels up to the site from Bannack. This road has several switch-back turns and ends at the saddle where a large area has been leveled. The openings were situated along the edge of this flat area. A number of small trees grew among the small dumps and openings. Several adits near this site had been adequatelly sealed by AMRB Phase 22.

1.1.13 Box X Site

The Box X Site was located in the SW¼ Section 9, T8S, R11W. An adequate, but in places deeply rutted road, runs from Bannack to the lower portion of this site where there were numerous caved openings, cabin ruins, and scattered debris. The main branch of this road continues south and eventually connects with a section of road along Grasshopper Creek serving the Bon Accord Placer Mine. The upper portion of this site was situated near the top of the ridge approximately one-fourth mile northwest of the cabin ruins. The upper portion consisted of the Box X 2 Shaft, which was 20 feet deep. There was no apparent developed access up to the shaft.

1.1.14 Bon Accord Site

The Bon Accord Site is located in the NW¼ Section 16, T8S, R11W. Access to the site area is via dirt roads from either Bannack or from a turnoff on Highway 278 at a point referred to as Tenmile House. The Bannack access is on that road which travels southeast out of the townsite on the northeast side of Grasshopper Creek. This road climbs in a easterly direction to the top of the ridge then turns south and drops down to Grasshopper Creek. It joins a road which runs through an active mining operation.

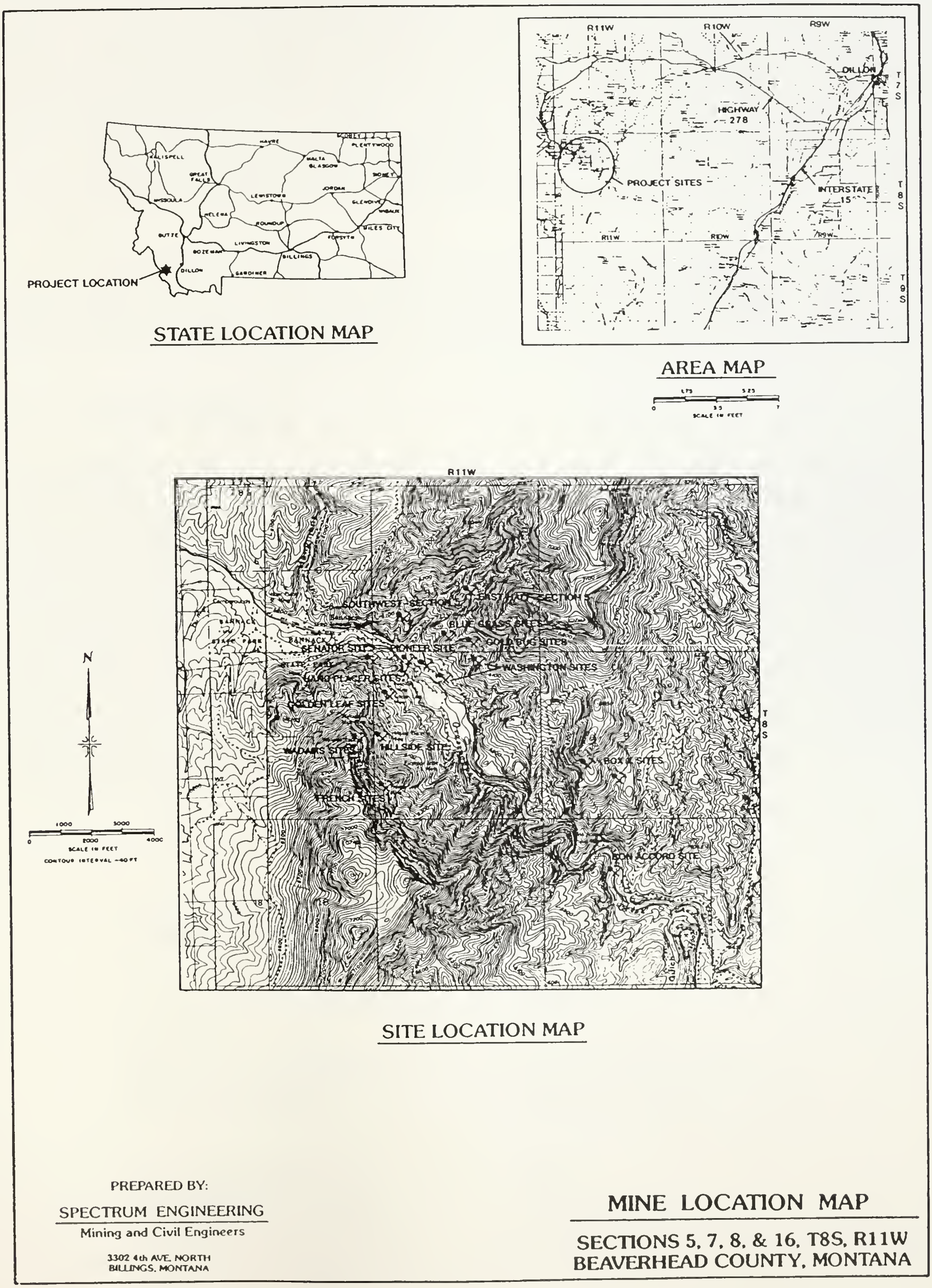
At the Bon Accord an opening is exposed in the wall of what appears to be a dragline cut. The opening is in weakly cemented gravel. It slopes at an angle of 30 degrees to more extensive underground workings. Throughout the area the creek bed is lined with piles of discarded gravel from past dredging operations. This site was withdrawn from the project at the landowner's request.

1.1.15 Other Inventoried Sites

Previous AML projects had sealed a number of adits and a shaft in the project area with devices that effectively restrict access. These sites requiring no action were inventoried as the Golden Ledge, the Excelsior, and the Wallace. In addition sealed adits were inventoried with the French and Wadams sites.

1.2 Maps Showing Mine Locations

The figure below shows the location of each of the project sites. The site location maps included with the as-built drawings shows the locations of individual openings.



STATE LOCATION MAP

AREA MAP

SITE LOCATION MAP

PREPARED BY:
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE. NORTH
BILLINGS, MONTANA

MINE LOCATION MAP

SECTIONS 5, 7, 8, & 16, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

1.3 Project Objectives

Portions of the Bannack Mining District were inventoried in 1983 and in 1987 and a number of the hazardous openings in the project area had been sealed by various temporary closure techniques during the resulting AMRB Projects. In 1990-1991 the project area was reexamined and the inventory was expanded. The goal of the engineering and construction phase of the project was to eliminate mine related openings by completely backfilling where practical or by installing substantial earth plugs or fabricated barriers where necessary. Thus the objective of the proposed work was to close all eligible openings in a manner which provides long term assurance that the public will be protected from the hazards associated with mine openings.

Because the land and mineral owners desired to maintain access into a shaft and several adits, access controlling devices were provided as requested. Landowner requests also forced the deletion of a site and several openings from the project.

1.4 Land Ownership

Sites within the project are located on various patented and unpatented mining claims in the Bannack Mining District. Many of the mineral surveys date back to the late 1800's. In the mid-1980's Robert L. Towner gained control over most of the affected area through acquisition, mineral leases or mineral claims on federal land. Since that time, Towner has actively mined or remined placers and processed mine dumps throughout the area. His mining activities extended to exploring his holdings and aggressively marketing the property to perspective mining enterprises. Just prior to construction Towner sold a substantial portion of the property. Although some property owners had simply gained title through inheritance, others considered themselves to be actively engaged in mining related business. However, none of the existing owners either created or actively utilized any of the openings included in the Bannack Mining District Project. A list of landowners follows:

Location (Section, Claim(s))	Site Name Surface (S) & Mineral (M) Owner
S½ S½ of Section 5	**Blue Grass**
on claims:	
Blue Grass (MS 683)	Landowner 1 (S & M)
Unpatented R.L.T. 3, 4 & 5	Landowners 1 (M), 2 (S)
Gold Bug (MS 5038)	Landowner 4 (S & M)
SW¼ of Section 9	**Box X**
on claims:	
Unpatented R.L.T. 19 & 20	Landowners 1 (M), 2 (S)

Location (Section, Claim(s))	Site Name Surface (S) & Mineral (M) Owner
NW¼ SW¼ SW¼ of Sec. 8	**French**
on claim:	
French (MS 235)	Landowner 1 (S & M)
W½ W½ of Section 8	**Hillside Placer**
on claim:	
Hillside Placer (MS 3554)	Landowner 1 (S & M)
NE¼ Sec. 7, NW¼ Sec. 8	**Golden Leaf**
on claims:	
Junction (MS 2893)	Landowner 1 (S & M)
Junction Mill (MS 2893B)	Landowner 1 (S & M)
Springfield (MS 248)	Landowner 1 (S & M)
Golden Leaf (MS 247)	Landowner 1 (S & M)
Hillside Placer (MS 3534)	Landowner 1 (S & M)
NW¼ SE¼ of Section 5	**East ½ Section 5**
on claims:	
Unpatented R.L.T. 5,6,9,10	Landowner 1 (M), 2 (S)
S½ Sec. 5, N½ Sec. 8	**Gold Bug**
on claims:	
Gold Bug (MS 5038)	Landowner 4 (S & M)
Washington (MS 684)	Landowner 1 (S & M)
SW¼ of Section 5	**Southwest Section 5**
on claims:	
Unpatented R.L.T. 4, 11, 12, 13	Landowner 1 (M), 2 (S)
Anniversary (MS 10275)	Landowner 3 (S & M)
NE¼ SE¼ of Section 7	**Wadams**
on claims:	
Wadams (MS 236)	Landowner 1 (S & M)
French (MS 235A)	Landowner 1 (S & M)
N½ N½ of Section 8	**Washington**
on claims:	
Washington (MS 684)	Landowner 1 (S & M)
Unpatented R.L.T. 6	Landowner 1 (M), 2 (S)
NE¼ NW¼ of Section 8	**Pioneer**
on claim:	
Pioneer (MS 1281)	Landowner 1 (S & M)

Location (Section, Claim(s))	Site Name Surface (S) & Mineral (M) Owner
SW¼ Sec. 5, NW¼ Sec. 8 on claims:	**Hand Placer**
Junction Mill (MS 2893B)	Landowner 1 (S & M)
Pioneer (MS 1281)	Landowner 1 (S & M)
Unpatented R.L.T. 2	Landowner 1 (M), 2 (S)
NE¼ Sec. 7, NW¼ Sec. 8 on claim:	**Senator**
Senator (MS 6013)	Landowner 5 (S & M)
NW¼ of Section 16 on claims:	**Bon Accord**
Bon Accord (MS 1708)	Landowner 6 (S & M)
White's Bar (MS 2778)	Landowner 6 (S & M)
P.J. Kelly (MS 2778)	Landowner 7 (S & M)

LANDOWNER #1
Rob Towner (80%)
P.O. Box 863
Hamilton, MT 59840
Telephone: 406/363-3281

Resolute Resources (20%)
666 Burrard Street
Vancouver, British Columbia
Canada V6C 2X8
Telephone: 604/682-5826

LANDOWNER #2
Bureau of Land Management
c/o Jim Lewis
Dillon District
Ibey Building
P.O. Box 1048
Dillon, MT 59725
Telephone: 406/683-2337

LANDOWNER #3
Gilbert Innes
P.O. Box 1428
Polson, MT 59860
Telephone: 406/883-4731

LANDOWNER #4
Roe Minerals (50%)
c/o Elizabeth Wilkens, et al
7018 32nd Ave. N.E.
Seattle, WA 98115
Telephone: 206/523-2178

Fielding Graves Estate (50%)
c/o Viola Graves, et al
304 Arizona
Dillon, MT 59725
Telephone: 406/683-2685

LANDOWNER #5
Ted Hazelbaker (40%)
P.O. Box 390
Dillon, MT 59725
Telephone: 406/683-4445

Gary & Jack Dumke (30%)
P.O. Box 481
Dillon, MT 59725
Telephone: 406/683-4736

Glenn Troutman (30%)
668 Essex Road
Glen Ellyn, IL 60134

LANDOWNER #6
Hans Andersen
524 S. Pacific St.
Dillon, MT 59725
Telephone: 406/683-5844

LANDOWNER #7
Darrell Fried & Marilyn Simmons
2005 Kober Place
Billings, MT 59102
Telephone: 406/259-9501

2. RESPONSIBLE PARTIES

2.1 Contractor

The successful low bidder was Baxter Construction. Their address is shown below:

Baxter Construction
4014 Hardin Road
Billings, MT 59101
Phone: 406/287-3032

2.2 Reclamation and Engineering Plan

Spectrum Engineering was assigned the responsibility of preparing the reclamation and engineering specifications prior to contractor selection. Spectrum's address is shown below:

Spectrum Engineering
3302 4th Avenue North
Billings, Montana 59101
Phone: 406/259-2412

2.3 Quality Control Inspection

Spectrum Engineering performed the quality control inspection. The project engineers were Don Sutton, Dave Murja, Bill Maehl and Gary Rome. The construction inspector was Bill Wolff.

2.4 AMRB Coordination

The AMRB Project Manager was Dale Herbort, Montana Department of State Lands, Abandoned Mine Reclamation Bureau.

3. CHRONOLOGICAL LISTING OF EVENTS

3.1 Pre-Bid Conference

The pre-bid conference was held on August 13, 1991.

3.2 Bid Date

The bid opening date was August 23, 1991. Prior to that time, one addendum was issued deleting all bid items associated with the Bon Accord Site. This was required because the landowner decided it was not in his best interest to participate in the AML program.

3.3 Three Lowest Bids

There were 7 bidders on this project with bids ranging from a low of $ 95,247.25 to a high of $ 218,506.63. The Engineer's Estimate was $ 145,630.00. The three lowest bidders are listed below. A copy of the bid tabulations is included in the back under Attachment 1.

Baxter Construction	Coleman Construction	AJAX Construction
Billings, Montana	Dillon, Montana	Victor, Montana
$ 95,247.25	$ 163,150.86	$ 166,679.00

3.4 Contract Award

The contract was awarded to the low bidder. Baxter Construction of Billings, MT was the low bidder.

3.5 Notice of Award

The Notice of Award was dated August 27, 1991 by the Department of State Lands. The Contractor acknowledged receipt of the Notice of Award on September 10, 1991.

3.6 Notice to Proceed

An agreement between Baxter Construction and the State of Montana was signed on September 23, 1991. The Notice to Proceed was processed on October 9, 1991 and acknowledged by Baxter Construction on October 15, 1991. Per this notice work was to commence not later than October 15, 1991 and was to be completed within 60 consecutive calendar days.

3.7 Construction Start-up

The Contractor attended a Preconstruction Conference on the morning of October 15, 1991 and began work the next day.

3.8 Change Orders

Three change orders were issued increasing the total contract amount by $420.00. Copies of the change orders are included in this report in ATTACHMENT 2. ORDER NO. 1 extended the completion date to May 3, 1992 to account for 116 days of work stoppages due to weather conditions. The order also increased the contract amount by $535.00 to close a shaft found near the Bluegrass Site. ORDER NO. 2 for an increase of $1,055.00 was issued after the contractor requested final inspection. Two mine opening closures plus seeding and fertilizing at the Wadams Site were added to the project. ORDER NO. 3 was issued to adjust the estimated revegetation acreage to the amount measured for payment. This order was for a decrease of $1,170.00.

3.9 Work Stoppages

Winter storms caused work stoppages from October 27, 1991 through November 10, 1991 and again on November 16, 1991. On November 18, 1991 a winter shut-down was declared on this project. The winter shut-down came after 18 available working days. Work resumed on March 16, 1992 and was substantially completed on April 15, 1992. After an inspection of the project on April 21-22, 1992, several additional work items were added. The contractor completed these tasks in one additional day on April 30, 1992.

3.10 Requests for Payment

Pay Request No.	Amount of Request	Date Approved
1	$18,261.00	Nov. 15, 1991
2	$25,328.72	Dec. 18, 1991
3	$37,655.30	Apr. 18, 1992
4 FINAL	$14,422.23	May 18, 1992

3.11 Substantial Completion

Spectrum Engineering and the AML Bureau received the Contractor's Certificate of Completion on April 17, 1992. An inspection of the project was conducted on April 21-22, 1992. The inspectors decided to add two openings closures to the project, seed the disturbed area at DM 53 and require reseeding and mulching of the access

disturbance at DM 5. The project additions and the required access revegetation were completed on April 30, 1992 and inspected on May 1, 1992 . Substantial Completion was on April 30, 1992.

3.12 Final Completion and Approval

The Final Completion date is one year from the Substantial Completion date or on April 30, 1993.

3.13 Final Payment

Final payment of $14,422.23 was recommended by the engineer on May 7, 1992. Payment was made to Baxter Construction shortly after final approval by AMRB on May 18, 1992.

4. CONSTRUCTION

4.1 Description of Project Plan

The project was designed to abatement hazards and to address some limited environmental degradation resulting from past exploration and gold mining activities at fourteen site groupings in the Bannack Mining District. These sites groupings included the Hand Placer, Southwest Section 5, East Half Section 5, Blue Grass, Gold Bug, Washington, Pioneer, Senator, Golden Leaf, Hillside, Wadams, French, Box X, and Bon Accord. The major items of work included caving and backfilling dangerous mine openings; installing earthen or gravel plugs, rock walls, access port culverts, a reinforced concrete plug, backfill retainment devices and a pre-cast concrete channel cover to prevent public access into mine related openings; eliminating hazardous drop-offs around mine openings; and, removing and disposing of debris.

Our initial plan envisioned permanent closure techniques for all openings using nearby dumps or borrow materials for backfilling at all sites. We also wanted employ blasting where applicable, to reduce the walls on several large subsidence craters, and to plant willows along a stream bank. During the inventory phase of the project, we had some limited opportunities to discuss design concepts with the principle landowner. His comments resulted in the deletion of several potential sites from the project and the selection of temporary closure techniques for several openings. The draft bid package was subsequently prepared and submitted for landowner approval. At the principle landowner's request, substantial changes in the draft plan were made. The changes included the substitution of additional access culverts to provide him controlled access to the underground workings. He also required that "washed gravel" be use as backfill in many of the openings. It was his feeling that "washed gravel" would serve to identify the locations of the backfilled workings and could more easily be removed. Moreover, the landowner requested that the abatement action should minimize disturbance to many of the dumps at the Gold Bug and Golden Leaf sites. The proposed abatement on the subsidence crater was also deleted from the project. Willow planting and an adit closure at the Bon Accord Site were deleted from the project when one of the affected landowners decided not to participate.

4.1.1 Hand Placer Site

The site consisted of nine openings. The openings at DM 1 and DM 2 were enclosed by fences which had to be removed. To the extent practical timbers and other biodegradable debris were to be removed from these shafts. DM 1 and DM 2 were to be completely backfilled using dump material and/or other readily accessible material. It was anticipated that the shallow opening at DM 4 would be backfilled utilizing its dump. All disturbed areas at these openings were be graded and revegetated. In addition, disposal of all site debris was required.

Material from the bank above DM 3 was to be caved and pushed into the opening to produce an effective closure. Only minimal grading was required in connection with the DM 3 closure. Broadcast seeding would be required. Disturbance caused by equipment access would be graded and revegetated.

The Contractor would block the entrances to DM 17 A & B by backfilling and recontouring the cut in which these openings were located. Fill would be obtained from the relatively flat area between the cut and the main access road. The completed fill section would extend to the crest of the cut and would be graded on a 2H:1V slope. All disturbed areas would be revegetated.

Openings DM 17 C, D, & E would be sealed through a combination of inducing roof collapse and backfilling. In each case, the entire disturbed area including access routes would be contoured and revegetated.

4.1.2 Southwest Section 5 Site

The Contractor was required to completely backfill those vertical shafts, pits, and inclined openings at DM 6, DM 7, DM 8A, DM 9, DM 10, DM 11, and DM 13. Earth and rock plugs would be installed at DM 5, DM 8B, DM 8C, and DM 14. Rock walls would be installed in each of the two drifts at DM 12 to prevent entry beyond the portal area. Where available the associated dumps could be used as a source of backfill material. Disturbances caused by equipment access to any of the openings were to be repaired. Debris disposal was required and could be handled at individual openings where necessary. All disturbed areas were to be seeded and fertilized. Mulching was required only at DM 11 and DM 14.

4.1.3 East Half Section 5 Site

The opening at DM 15 was to be plugged with rock excavated from the associated dump. It was specified that the plug would be not less than three feet deep at the roof. Revegetation was not required at DM 15.

At DM 16, a solid rock wall would be installed 8 feet in from the portal. The wall would be constructed of native rock and mortar. Ample rock was available directly below the portal. It was specified that the wall would be 2 feet thick at the top. The section of adit where the wall would be located had an irregular shape but was approximately 4 foot wide and 8 foot high. As an alternative the Contractor could select to install a 10-foot long, solid earth and rock plug in the opening. If the plug alternative was employed, revegetation would be required.

A 10 foot long earthen plug was to be installed in the horizontal mine opening at DM 19. The portal and plug would then be obscured by backfilling and regrading the adit trench to blend with the natural ground. The regarded area would be revegetated. Dump material piled along the sides of the trench and in front of the adit would be used as backfill.

Disturbances caused by equipment access to any of the openings would be repaired. Repairs may include grading and revegetation.

4.1.4 Blue Grass Site

The Bluegrass Sites consisted of a series of shafts, stopes, pits, and adits extending from the top of the ridge to the drainage bottom. All fence was to be removed and disposed of. The project objectives at the Bluegrass Site were to completely eliminate each of the designated openings by backfilling, to consume all of the dump material in the backfilling operation, and to regrade the site. It was anticipated that the available dump material would not be sufficient to accomplish the major objective. Consequently, the Contractor would be required to develop adequate borrow material by a combination of borrowing material from the top of the ridge and recontouring the adjacent slopes. The finished surface was to permit positive drainage. Slopes were not to be greater then 2H:1V. The disturbed area would be revegetated.

4.1.5 Gold Bug Site

Many of the openings were situated on a steep southeasterly facing hillside, well above developed access. DM 32, 33, & 34 required no action because they were relatively stable, shallow inclined openings and the surface owner wanted them preserved due to the crystal formations which they expose. No action was proposed for the major adit, DM 42, because the landowner stated that there was a possibility that this opening would be utilized in future mining activity. At the landowner's request, DM 47, a 4½ foot by 4 foot tunnel that extends 14 feet in solid rock, was not to be disturbed.

The objective of the proposed work at the Gold Bug Site was to completely plug each of the designated openings by backfilling. Except at DM 31, none of the associated dumps could be utilized as backfill and incidental disturbance to the dumps had to be kept to a minimum. "Washed gravel" was to be supplied by the Contractor and utilized for backfill material on all Gold Bug openings except DM 31 and DM 35.

The vertical opening at DM 31 was to be completely backfilled with material from its associated dump. Revegetation was required at this opening.

At DM 35, the Contractor was required to install a backfill-retainment curtain across the entrance to the mine and then backfill against that curtain. This curtain was to be fabricated on site and was to be of an adequate size and shape to prevent backfill from entering the mine opening. The curtain would be constructed of joined sheets of 3/8-inch sheet piling having a minimum section medullas of 15 IN^3 per linear foot. The entire curtain would be covered with material borrowed from the cut. The fill would be sloped away from the opening at 1.5H:1V and would extend 2 feet above the top of the curtain. Disturbed areas would be revegetated.

The vertical openings at DM 36A (2 openings), DM 37, DM 38, DM 40, DM 41 (3 openings), DM 43, DM 45, DM 48, and DM 49 were to be completely backfilled with "washed gravel". The inclined opening, DM 46, would be completely plugged with "washed gravel". A 10 feet long plug consisting of "washed gravel" would be installed in DM 36B. "Washed gravel" would be used to fill the trench and to

construct an 8 foot long plug in the adit at DM 39. In addition, the underground cavity at DM 44 would be exposed and backfilled with "washed gravel".

The Contractor would be required to remove and dispose of the fences at sites DM 43, DM 48 and DM 49. Disposal of site debris was required at all sites. The Contractor would be required to provide additional access beyond the current roads and to repair any access disturbance by grading and revegetation. No revegetation was desired on those openings requiring "washed gravel" backfill.

4.1.6 Washington Site

The Washington Sites include four openings. Because the land and mineral owners desired to maintain access into Washington Shaft A, a seal which could be opened and reclosed with equipment was specified. The concrete collar around the shaft would be cleared off but was expected to provide a suitable base for the cover. An area 19 feet wide by 18 feet long would be covered with 6 concrete channels, each 3 feet-2 inches wide and 18 feet long.

The Contractor would completely backfill Washington Shaft B utilizing the material which had been piled nearby. The excess material in the pile would be graded and then revegetated along with the backfilled area. Fence which had been removed to affect this closure and which was already down, was to be repaired.

At DM 64 the shaft was to be backfilled to the elevation of the collar on the downhill side. The dump and rock which could be pried up near the opening was to be used for backfill. Seed would be broadcast on the disturbed area. Any disturbance caused by equipment access beyond the established roads would be reclaimed.

The Contractor would be required to install a solid rock plug in the entrance to DM 64. The plug would extend at least 4 feet into the adit along the top. Rock from the dump and rock excavated from the hillside would be used in the plug. Seed would be broadcast on the disturbed area. Any access related disturbance would be reclaimed.

4.1.7 Pioneer Site

The Contractor would be required to install a 30 feet of 36 inch diameter corrugated metal pipe (CMP) in the adit. The CMP would be equipped with a locking metal grate. This work was to include establishing access, excavation to expose the adit, preparation of a base to support the CMP, installation of the CMP, backfill, and compaction to secure the CMP in place. Reclamation of the access route beyond the established road and seeding all affected areas would be required.

4.1.8 Senator Site

The site consisted of three hazardous mine openings. We planned to install a 10 foot long earthen plug in the horizontal mine opening at DM 20. The timbers and lagging in the mine were not to be disturbed. After installing the plug, all material mounded along the sides of the trench would be pushed back into the trench and graded to blend with the natural terrain. Debris on the associated dump would be gathered and disposed of. The regraded trench area would be revegetated.

The Contractor was to completely backfill the shaft at DM 21 to its collar elevation. The primary source of backfill material would be the associated dump. The road cut above the shaft, as well as, those areas adjacent to the shaft collar could also be utilized as sources of material. The barbed wire fence enclosing the opening would be removed and treated as debris. All disturbed areas would be revegetated.

At DM 22 the underground void was to be eliminated by caving the roof and pushing material into the opening. The entire void would be filled and the surface in this area would be graded to form a depression which drains toward the road. All disturbed areas would be revegetated.

4.1.9 Golden Leaf Site

The Golden Leaf Sites were generally accessible to within 200 feet via the numerous roads and trails which cut across this slope. The plan provided for the following:

1. Golden Leaf Mine - A 36-inch diameter by 35 feet long corrugated metal pipe (CMP) with a locking hatch would be installed. Due to the condition of the adit, the Contractor would be required to remove all of the timbers, shoring, lagging and debris within the adit and trench for a distance of 28 feet in from the mine portal. Thus, 20 feet of CMP would be installed within the unaffected portion of the adit and 15 feet of CMP would extend into the cleared portion of the trench. The bottom of the trench and adit would be filled and graded to support the CMP. The fill section would slope into the adit with a drop of approximately 2 feet over the 35 feet of length and would be of sufficient thickness to allow the top edge on the hatch to sit at the same elevation as the adit roof. The area between the hatch location and the road would be contoured to provide positive surface drainage toward the lower road and away from the CMP. The sides of the trench would be excavated as necessary to permit culvert installation and to establish side slopes of no more than 1.5H:1V on the recontoured trench. After the CMP has been set in place, the Contractor would be required to fill around and above the CMP to secure it. Material could be borrowed from the sides of the trench. All disturbed areas would be revegetated.

2. DM 50 - The Contractor would be required to remove and dispose of the fence, The shaft would be completely backfilled using the dump as the primary source of fill. All disturbed areas would be graded and revegetated.

3. Manway Complex - The structure on the site would be preserved. The 40 foot by 70 foot area would be deep ripped or excavated and caved. The area would then be regraded and revegetated. Borrow would not be required.

4. DM 54 - We planned to completely backfill this shaft with dump material from along the downhill edge of the collar. All disturbed areas would be graded to blend with the natural terrain. An attempt would be made to revegetate this rocky area.

5. DM 55 - We had planned to reduce the walls around the crater and to eliminate the shaft by cutting and filling. This would have required recontouring the affected area as a depression with safe slopes. However, at the request of the landowner, this site could not be disturbed.

6. DM 56 - The Contractor would collapse the roof and then completely backfill the opening with "washed gravel".

7. DM 57 - The Contractor would be required to cave the entrance of this adit by pulling the first set of timbers. The trench would then be completely filled with "washed gravel".

8. DM 58 - The Contractor would remove and dispose of the top five feet of timbers lining the shaft. The shaft would then be completely backfilled with "washed gravel". The depression near the shaft would also be backfilled with material cut from the shaft collar. The fence around the opening would be removed.

9. DM 59 - The Contractor would be required to backfill the adit trench at this site with "washed gravel". Disturbance to the large dump was to be avoided.

10. DM 60 - The Contractor would be required to backfill the adit and trench with "washed gravel". It was anticipated that caving a portion of the roof would be necessary to open the adit for backfilling. Any disturbance to the dump was to be avoided.

11. DM 61 - The Contractor would completely backfill the crater with washed gravel (approximately 550 cubic yards of material). This operation was expected to require access development and grading.

12. DM 62 - We planned to install a reinforced concrete plug in the upper 6 feet of the raise. It would be necessary to build a bulkhead (to be left in place) in the raise to hold the concrete in place as it dried. The plug would be constructed in-place utilizing Type C-3000 concrete. Reinforcing steel would consist of 6" X 6", 10 gauge wire mesh and #4-Grade 60 bar.

13. Pricilla Mine - The adit was recently used for exploration and was considered to be active; therefore no action was planned.

14. Lower Crater - No action was planned or taken on the Lower Crater.

Except at DM 50 and DM 54, none of the associated dumps could be utilized as backfill and incidental disturbance to the dumps would be kept to a minimum. "Washed gravel" would be supplied by the Contractor and utilized for backfill material at the Golden Leaf sites: DM 56, DM 57, DM 58, DM 59, DM 60 and DM 61.

4.1.10 Hillside Site

A 36-inch diameter by 30 feet long corrugated metal pipe (CMP) with a locking hatch would be installed. Due to the condition of the adit, it would be necessary to remove all of the timbers, shoring, lagging and debris within the adit and trench for a distance of 28 feet in from the mine portal. Thus, 9 feet of CMP would be installed within the unaffected portion of the adit and 21 feet of CMP would extend into the cleared portion of the trench. The bottom of the trench and adit were to be filled and graded to support the CMP. It was specified that the top edge on the hatch would sit at the same elevation as the adit roof. The area between the hatch location and the road would be contoured to provide positive surface drainage toward the road and away from the CMP. The sides of the trench would be excavated as necessary to permit culvert installation and to establish side slopes of no more than 2H:1V on the recontoured trench. After the CMP has been set in place, the Contractor would be required to fill around and above the CMP to secure it. Material could be borrowed from the sides of the trench. The dump at this site was not to be disturbed. The Contractor would properly dispose of all debris. All disturbed areas would be revegetated.

4.1.11 Wadams Site

At DM 52 all timbers and debris which might obstruct effective backfilling of the opening were to be removed. The opening would then be totally plugged with earth and rock from the dump. The plug and the portion of the dump which had been utilized would be rough graded to blend with the terrain. All disturbed areas would be revegetated.

At DM 53 dump material could not be utilized as backfill and incidental disturbance to the adjacent dump had to be kept to a minimum. "Washed gravel" was to be supplied by the Contractor and utilized for backfill material. Revegetation would not be required due to the gravel fill requirement.

Opening B would be backfilled to the surface with "washed gravel". Openings C and D would be completely backfilled with "washed gravel". All of the openings which led to stope E would be plugged solid with "washed gravel". These plugs would extend at least 10 feet into the underground opening.

Because opening A develops into a large vertical opening which is segmented by a number of wood decks, we planned to install a backfill-retainment curtain across the entrance and then backfill against that curtain. The curtain would be fabricated on site and would be of an adequate size and shape to prevent backfill from entering the actual opening. The curtain would be constructed of joined sheets of 3/8-inch sheet piling having a minimum section medullas of 15 IN^3 per Ln Ft. The bottom of the curtain would be seated in a 2 foot deep keyway which would be cut 5 feet from the edge of the opening. The top edge of the curtain would extend 5 feet past the roof of the opening. The entire curtain would be covered with "washed gravel". The gravel fill would be sloped away from the opening at 2H:1V and would extend 2 feet above the top of the curtain. The fence surrounding DM 53 was to be left in place.

4.1.12 French Site

At the French Site, we planned to eliminate each of the mine openings by utilizing the material from the nearby dumps and surrounding area to fill them. Limited grading would be required. All disturbed areas would be revegetated.

4.1.13 Box X Site

We planned to gather and dispose of all debris at the Box X Site. Standing portions of the cabin ruins were not considered debris and would be preserved. Any disturbance caused by debris disposal and a barren area on the site (excluding the dumps) would be revegetated.

The Box X2 Shaft would be completely backfilled utilizing material from the dump and supplemented with material borrowed from around the shaft collar. The area would be rough graded to blend with the natural terrain and the entire disturbed area would be revegetated. Any disturbance caused by site access would be repaired and revegetated.

4.1.14 Bon Accord Site

The work at this site was to consist of plugging an opening which provides access to underground mine workings and performing willow plantings for stream channel stabilization. Landowner consent for construction could not be obtained.

4.2 Major Equipment List

Type	Make/Model	Size/Horsepower	No. on Job
Hydraulic Excavator	Deere 490D	5/8 yd - 75 hp	1
Track Loader	Deere 755	2¼ yd - 152 hp	1
Tractor-Loader-Backhoe	Case 580D	7/8 yd - 55 hp	1
Scraper	Terex TS-14	14 yd - 288 hp	1

4.3 Contractor Employees

Baxter Construction employed one laborer for 21 days and two laborers for 2 days. In addition two officers of the company worked on 22 days and three company officers worked on 5 days. There were never more than a total of four personnel from Baxter Construction on the site on any day. However, Wade Hansen of Wade's Backhoe Service worked as a sub-contractor on the project. He provided the JD 490 backhoe and was engaged for 9 days.

4.4 Description of Actual Construction Activities

In addition to the following described construction activities many of the sites required debris clean-up. Because the principle landowner and claim holder expressed his desire to examine all debris, clean-up was limited to collecting debris and stacking it near the site.

4.4.1 Hand Placer Site

The site consisted of nine openings.

1. DM 1 - The existing fence was removed on 10-16-91. The corner panels were dismantled on 10-22-91. The contractor used a track loader to completely backfill this shaft with material borrowed from the dump and other adjacent sources. On 3-27-92, the contractor revegetated the disturbed area. Seed, fertilizer, and mulch was spread by hand. The straw mulch was crimped by the 580D backhoe with a crimper attached to its bucket.

2. DM 2 - The existing fence was removed on 10-16-91. The corner panels were dismantled on 10-22-91. The contractor used a track loader to completely backfill this shaft with material borrowed from the dump and other adjacent sources. On 3-27-92, the contractor revegetated the disturbed area. Seed, fertilizer, and mulch was spread by hand. The straw mulch was crimped by the 580D backhoe with a crimper attached to its bucket. A total of 0.15 acres was revegetated at DM 1 and DM 2.

3. DM 3 - The Contractor used a track loader to completely backfill this adit with material borrowed from the adjacent dump area. This area was regraded and dressed on the same day, 11-15-91. On 3-27-92, 0.04 acre was seeded, fertilized and mulched by hand.

4. DM 4 - The contractor used hand tools to backfill this shallow shaft on 10-23-91. The adjacent dump supplied the fill material. The 0.01 acre area disturbed by this operation was seeded, fertilized and mulched on the same day.

5. DM 17 A & B - The entrances to these two interconnecting adits were blocked with fill material borrowed from the area between the cut and the road and from the area above the adits. This operation was completed on 11-15-91 using the 755 track loader. Revegetation of 0.02 acres was completed on 3-27-92.

6. DM 17 C, D, & E - Prior to construction, the landowner built a road through this area removing or partially burying these openings. Baxter completed closing C and D on 4-02-92. A small opening east of the site was substituted for opening E. Seeding, fertilizing and mulching was completed on the same day. The revegetated acreage was 0.024 acres.

7. During construction an additional opening was exposed between DM 1 and DM 2. A change order was issued to completely backfill this opening. This inclined opening was backfilled on April 30, 1992. The entire disturbed area was seeded, fertilized and mulched on the same day.

4.4.2 Southwest Section 5 Site

Equipment access to DM 6, DM 7, DM 8, DM 9, DM 10 and DM 13 was expected to be difficult. The contractor decided to construct a site access trail along the bottom of a centrally located draw. From this trail the contractor's crawler mounted equipment was able reach most of the openings without creating further access disturbance. However, access to DM 9 and DM 10 required some additional access development. Those areas which were disturbed to develop site access were repaired after site work was completed. Hay bales were placed on the reclaimed access trail to retard channel cutting.

1. DM 5 - An earth plug was installed and the disturbed area was reseeded on 10-21-91. The contractor was able to walk a hydraulic excavator up to the opening. The material placed in the opening was excavated from the area around the portal. On April 30, 1992, access disturbance to this opening was mulched.

2. DM 6 - This shaft was completely backfilled and the disturbed area was reseeded on 10-21-91. The 490D excavator was utilized to move fill material from the dump to the opening.

3. DM 7 - The 490D excavator was used to remove the wooden structure over the opening. The opening was completely backfilled with material which was excavated from the area surrounding the trench. The disturbed area was rough graded and reseed. The work was completed on 10-21-91.

4. DM 8 - The 490D excavator was used to complete the specified work on October 21 & 22, 1991. DM 8A and DM 8B were caved and backfill with dump material. The entrance to DM 8C was completely plugged by a combination of backfilling and caving. Most of the dump material was consumed in this operation. The entire area was rough graded and seeded on 10-22-91.

5. DM 9 - This shaft was completely backfilled and the disturbed area was reseeded on 10-22-91. The 490D excavator was utilized to move fill material from the dump to the opening.

6. DM 10 - This shaft was completely backfilled and the disturbed area was reseeded on 10-22-91. The 490D excavator was utilized to move fill material from the dump to the opening.

7. DM 11 - On 10-22-91 the contractor completely backfilled openings A through E with material borrowed from the associated dump. A track loader was utilized in this operation. The total disturbed area covering 0.12 acres was seeded, fertilized and mulched on 10-23-91.

8. DM 12 - Backfill plugs were substituted for the rock walls which we had been planned to seal each of the two drifts in this mine. This substitution made it necessary to develop equipment access and to disturb the large dump below the portal. The contractor used a track loader to improve an existing trail on 10-22-91. The next day he moved a 490D excavator to the site and constructed the plug utilizing material from the dump. In this operation it was necessary to enlarge the mine portal. Each drift was plugged solid for a distance of 5-7 feet. These plugs extend out to the portal area but only partially fill the mine entrance. Consequently, the only the first 5 feet of the mine remains partially open. The total disturbed area covering 0.04 acres was seeded, fertilized and mulched on 10-23-91.

9. DM 13 - This shaft was completely backfilled and the disturbed area was reseeded on 10-21-91. The 490D excavator was utilized to move fill material from the dump and adjacent areas to the opening.

10. DM 14 - As planned the contractor cleared the outer portion of the adit and the trench of mine timbers and debris then plugged the adit and backfilled the entire trench. A track loader was used to accomplish this work on 10-22-91. The primary source of backfill material was the large dump in front of the opening. The backfilled area and the top of the dump were regraded. The total disturbed area covering 0.05 acres was seeded, fertilized and mulched on 10-23-91.

4.4.3 East Half Section 5 Site

1. DM 15 - On 10-16-91, rock from the dump and the adjacent area was hand stowed in this short adit until the entrance was completely plugged. As specified seeding was not required on this rock backfill.

2. DM 16 - On 4-14-92, three men from Baxter Construction moved to DM-16 to begin building the rock wall. Most of the rock was obtained from the retaining wall below the opening. All other materials were packed up to the site by hand. This included 23 - 60 pound bags of sac-crete, 24 gallons of water and miscellaneous tools. The wall was installed approximately 9′ in from the entrance. A base key with the dimensions of 3.5′ length 3′ wide and approximately 12 inches deep was cut in the floor. As the wall rises, it widens to approximately 5′ while decreasing to a thickness of 2 feet. At a height of 5.5 feet, the wall is approximately 18" thick and approximately 7′wide. This

width then grows smaller as the wall matches the curve of the roof. A 36"X4" plastic pipe was placed 6" up from the floor. At a point a third the distance of the height of the wall, another 36"X4" plastic pipe was placed 1′ from the right wall of the opening. Construction was completed 4-15-92.

3. DM 19 - As planned the contractor installed a 10 foot long plug in the adit and then filled the adit trench to blend with the natural ground. The dump was almost totally consumed in this operation and was rough graded. The 0.03 acre area was seeded, fertilized and mulched. All work was completed on 10-22-91 with the 490D excavator being utilized.

4.4.4 Bluegrass Site

All major openings at the Bluegrass Site had been fenced during an earlier AMR project. All existing fences were dismantled and removed from the site by the contractor over a two day period beginning on October 16, 1991.

1. DM 25, DM 26, DM 27, DM 28, DM 29, DM 30 and Depression A - These openings situated along the top of the ridge were completely backfill by the 490D excavator between October 22 and October 24, 1991. The small dumps associated with these openings were the primary sources of backfill material. On October 24, 1991, the disturbed area of 0.22 acres was seeded, fertilized and mulched.

2. Shaft 1, Shaft 2, Shaft 3, Shaft 4 - From October 22 through October 24, 1991, Baxter Construction employed their track loader and the 490D excavator to backfill these shafts. Backfill materials came from a borrow area near the top of the ridge, regrading the affected areas, and the dumps scattered on the hillside. Additional grading and dressing was accomplished with a 755 track loader on 3-30-92. On the same day the Contractor revegetated a portion of the area.

3. Shaft 5 - This 22 foot deep shaft was backfilled associated dump material and material gained by regrading the adjacent area. Work was completed on October 24, 1991 when the 0.19 acre disturbed area was seeded, fertilized and mulched.

4. Shaft 6 - This shaft was backfilled on 11-15-91. The contractor used his track loader to load-haul-dump from a nearby borrow area. On 3-28-91 this area was seeded, fertilized and mulched.

5. Depressions B, C, D, E and F - On October 23 and October 24, 1991, Baxter Construction employed their track loader and the 490D excavator to backfill these depressions. Backfill materials came from a borrow area near the top of the ridge, regrading the affected areas, and the dumps scattered on the hillside. On 11-15-91, additional contouring work was completed in the Depression A area to reduce the maximum slope to not steeper than 2H:1V. On 3-30-92 final

contouring was completed using the JD 755 track loader to haul borrow material from waste piles. The 490D excavator rebuilt slopes and dressed the area.

A total of 2.08 acres was seeded, fertilized and mulched at the Bluegrass Site. This included several small access roads, a borrow area south of depressions A & B, and a machinery loading and maintenance area. All seeding and fertilizing was accomplished using a hand operated spreader. Crimping was accomplished by using a 12-inch disk crimper attached to thee bucket of the 490 excavator. The bucket on the 490 is articulated and allowed a greater flexibility in following contours.

During construction, an additional shaft was discovered on the slope north of the Bluegrass Site. Verbal approval to fill this shaft was granted on April 6, 1992. On 4-9-92, Baxter used his JD 755 loader to build an access road to shaft. The same machinery was then used to haul borrow material to fill the shaft. On 4-10-92 the contractor revegetated the disturbed area. Seed and fertilizer was spread by the broadcast method. Mulch was crimped with the 580D backhoe and crimper. A total of .09 acres was seeded.

4.4.5 Gold Bug Site

Baxter Construction obtained "washed gravel" fill from a source located southeast of the Pioneer Adit. The "washed gravel" was purchased from RLTCO, the placer mining company which had been operating in the Bannack area.

1. DM 31 - This 15 foot deep shaft was completed backfilled with dump material on 10-25-91. The 490D excavator walked down the ridge from the Blue Grass Site to reach this opening. On 3-26-92, 0.002 acres was fertilized and seeded by hand.

2. DM 35 - On 3-24-92, a 234 foot access road was built from the established road below DM-35 north and then east to the trench in front of DM-35. The curtain was constructed of 3"X6" I-beams and 3/8" sheet steel. Three 12' long beams were placed 3' apart with two sheets of 3/8" sheet steel making a 10'X12' curtain. The entire curtain was pre-fabricated below DM-35 on the access road and was hauled into place using the JD 755 Loader. A 2'X11' trench was excavated below the opening to form a base for the curtain. Material was mounded between the base and the opening to provide back support for the curtain. The curtain extends 5' to 6' above the brow of the opening and 2' beyond each side of the opening. After placement, the curtain was buried with material excavated from the area adjacent to the opening. Only the 0.07 acre area disturbed by the haul road to DM-35 was seeded, mulched and fertilized by hand.

3. DM 36 A & B, DM 37 and DM 38 - These openings were backfilled with "washed gravel". Access was established by constructing a road from below DM-35 across the slope in a northeasterly direction to the base of DM-38. A

branch from this road extended to DM 36 A and DM-37. The total length of the access road was 431 feet. Approximately 354 cubic yards of "washed Gravel" was hauled by a TS-14 to the base of the access road and stockpiled. It was then shuttled to each opening in the bucket of the JD 755 loader. Work on this group of openings continued from 3-28-92 to 3-30-92. On 4-1-92 the access roads were regraded using the JD 490 excavator. Access disturbance of 0.33 acres was revegetated by hand at the same time.

4. DM 39 - The "washed gravel" fill for this site was hauled by scraper to an area on the road below this opening. It was then transferred to the opening by the JD 755 loader. The opening was plugged with approximately 10 feet of compacted fill. The trench area around the opening was completely backfilled. As measured by loader trip count, 104 cubic yards were used to close this opening. No revegetation was required at this site. Work on this opening was accomplished on 3-29-92.

5. DM 40 and DM-41 - The "washed gravel" fill specified for this group of openings was hauled to area by scraper and stockpiled below DM40. On 3-30-92, the contractor load-haul-dumped 216 cubic yards of this material to backfill these openings. Several haul roads and dump areas amounting to 0.19 acres required revegetation which was accomplished on 4-7-92. Seed, fertilizer and mulch was spread by hand and crimping was accomplished with the 580 Case backhoe and crimper.

6. DM 43 - The fence installed during a prior AMR project was removed by Baxter Construction on 10-17-91. After the winter shut-down the contractor used a TS-14 scraper to stockpile "washed gravel" below the openings. Using his JD 755 loader, he then completely backfilled the openings and eliminated the associated highwall using approximately 350 cubic yards of this material. Backfilling and contouring on the site was begun on 3-25-92 and finished on 3-26-92. Only the stockpile area and access were revegetated.

7. DM 44 - To access these openings, Baxter built a trail up the slope on the east side of DM-43. The trail then turned to the west and crossed between DM 43 and DM 44 at the elevation of the lowest opening at this site. The underground cavity was then exposed by excavating a slot which connected with the existing vertical opening at the top of the cavity. On April 26-27, 1992 the contractor backfilled the entire cavity using the JD 755 loader and scraper. The "washed gravel" was hauled to a stockpile near the base of DM 43 by the TS-14 scraper. It was then transferred up to the opening one bucket load at a time by the JD 755 loader. After the vertical opening was filled, the access trail was extended around to the opening on the west side of the cavity to complete the backfilling process. Approximately 303 cubic yards was used to fill the cavity plus another 85 cubic yards was consumed in access development.

8. DM 45 - Access to this shaft was established by extending the route used to backfill DM 44. Again "washed gravel" was hauled to the a stockpile below DM 43 and then shuttled to the opening by track loader. Approximately 275

cubic yards was used to fill the shaft and the cut leading to it. After backfill was completed the access trail was recontoured with the JD 490 excavator. The back fill operation took place on 3-27-92. Recontouring, seeding, fertilizing and mulching of the 0.25 acres used for access and stockpiling was accomplished on 4-2-92.

9. DM 46 - On 3-25-92, this inclined adit was completely plugged with about 56 cubic yards of "washed gravel". The fill was hauled to the a stockpile below DM 43 and then shuttled to the opening by track loader. The 580 backhoe was also employed to expand the opening and to stow the fill. No revegetation was required at this opening.

10. DM 48 - The fence installed during a prior AMR project was removed by Baxter Construction on 10-17-91. After the winter shut-down, a narrow access trail was constructed up the small drainage leading to the site. On 3-25-92 the shaft was fill with 90 cubic yards of "washed gravel". This material was initially hauled by scraper to a stockpile area below DM 49. It was then transported to the opening in the bucket of JD 755 loader. The fill area was not revegetated; but, 0.07 acres of associated access disturbance was dressed, seeded, fertilized and mulched 3-26-92.

11. DM 49 - The fence installed during a prior AMR project was removed by Baxter Construction on 10-17-91. After the winter shut-down, a steep access trail was constructed up the slope to the site. On 3-25-92 the shaft was fill with 57 cubic yards of "washed gravel". This material was initially hauled by scraper to a stockpile area below DM 49. It was then transported to the opening in the bucket of JD 755 loader. The fill area was not revegetated; but, 0.03 acres of associated access disturbance was dressed, seeded, fertilized and mulched 3-26-92.

12. A change order was issued to close an additional horizontal opening which was discovered during the final inspection. This opening was located between DM 43 and DM 46. It was partially blocked by a mound of earth. Baxter plugged this opening with earth on April 30, 1992. The exposed portion of the plug and other associated disturbances were seeded, fertilized and mulched.

4.4.6 Washington Site

1. Washington Shaft A - The fence on the east side of the enclosure was removed for access. Shaft A had a concrete collar around the top edge and required placement of 6 precast channel sections to cover the opening. The channels were 18'X 3'2"X 1'3". When placed side by side, they covered an area of 18'X 19'. The channels were placed with the 18' length running east and west. Channels was placed with the JD 755 loader equipped with a boom attachment. Before the channels were placed, the collar was cleaned and area was leveled. Channel placement was accomplished on 3-25-92.

2. Washington Shaft B - On 3-25-92, shaft B was backfilled with material from the adjacent pile using the JD 755 loader. Revegetation and fence replacement was accomplished on 3-27-92. Reclaimed borrow and fill areas totaled 0.07 acres. Crimping was done by the 580 backhoe with crimper.

3. DM 63 - This shallow shaft was backfilled by hand on 10-22-91. The primary source of backfill was the associated dump. The disturbed area was broadcast seeded the same day.

4. DM 64 - This short adit was plugged by hand on 10-23-91. As specified the plug was approximately 5 feet deep at the top. Loose rock from the dump was used in the plug. Seed was spread on the disturbed area.

4.4.7 Pioneer Site

On October 24-25, 1991, Baxter Construction used its tractor-loader-backhoe to excavate material from the front of the Pioneer Adit (DM 24). The specified 36" X 30 foot CMP was set in place in the adit and secured with backfill on November 14, 1991. The required site grading was completed the same day. The locking hatch cover for the CMP was installed on April 30, 1992. As installed the culvert was placed on a more level grade than was anticipated.

4.4.8 Senator Site

1. DM 20 - The debris around this major adit was cleaned-up on 10-25-91. On 11-15-91, the track loader moved to this site. The adit was plugged and the adit trench was backfilled. The backfilled area and borrow area along both sides of the trench was graded to blend with the surrounding terrain.

2. DM 21 - On 10-17-91, the fence enclosing this 31 foot deep shaft was dismantled and removed. The 490D excavator completely backfilled this opening on 10-26-91 by excavating material from the dump.

3. DM 22 - This 25 foot long adit was eliminated by the track loader on 11-15-91. Baxter dug out the roof and backfilled the opening. Fill material was borrowed from along the north side of the trench leading to the adit.

On 3-28-92, the Senator sites were revegetated. Seed and fertilizer was spread by hand. Where possible crimping was done with the 580 backhoe, otherwise crimping was done by hand using home-built hand crimpers. A total area of 0.18 acres was revegetated.

4.4.9 Golden Leaf Site

1. Golden Leaf Mine - The tractor-loader backhoe was use to clean-out the front portion of the adit on 10-25-91. In this operation the timbers and lagging were removed from the trench. The sides of the trench were cut back to prepare the opening for the CMP. The 36" by 35 foot CMP was installed in the adit on 11-14-91. A track loader was used to maneuver the CMP into position and to push it into the opening. The next day Baxter Construction backfilled around the CMP and graded the affected area. On 4-6-92 the contractor installed the prefabricated gate on the 36" CMP. Installation was according to specifications and all bolt threads were pared over to prevent removal. On 4-8-92 seed and fertilizer were spread by the broadcast method. Crimping was accomplished by hand and by the 580 backhoe with a crimper attached to the front bucket. A total of .05 acres was revegetated.

2. DM 50 - Baxter removed the fence at this shaft on 10-17-91. On 10-26-91, the 490D excavator was utilized to completely backfill the opening with dump material. On 4-8-92, 0.17 acres were revegetated. Seed and fertilizer was spread by the broadcast method and crimping was done with a hand crimping tool.

3. Manway Complex - On October 26, 1991, the contractor used the 490D excavator, which is configured as a backhoe, to collapse and rough grade this feature. We found that the Manway Complex was probably an underground storage tank. The tank was 12 feet wide by 60 feet long and had concrete walls covered by a wooden deck. Where the wood deck had not already collapsed, it had to dug out. The manway structure at the surface was situated along the edge and did not have to be moved. Total disturbance was confined to a 77′ X 42′ area. Baxter Construction revegetated 0.08 acres on 4-8-92. All seed and fertilizer was spread by the broadcast method with the crimping being accomplished using the 580 backhoe-loader with a home built crimper attached to the bucket.

4. DM 54 - This shaft was backfilled on 4-1-92. The contractor used his JD 490 excavator to move all the dump material on the north side of the opening into the depression. Backfill consisted of broken rock and was graded with the articulated bucket on the JD 490 excavator. No revegetation was done at this site.

5. DM 56 - On 4-7-92 Baxter Construction built a short access road above and to the east of this adit using the JD 755 track loader. The specified "washed gravel" was hauled to a stockpile near this site using a Terex 14 yard scraper. The track loader was then employed to shuttle 42 cubic yards of this material to the opening and trench. After the opening was backfilled, the access road was regraded and revegetated. Seed, and fertilizer were broadcast. Straw was spread and crimped by hand. Revegetation covered 0.04 acres.

6. DM 57 - "Washed gravel" was hauled to an established road directly below DM-56 using the Terrex 14 yards scraper. Backfilling was accomplished on 4-7-92 using the JD 755 track loader. Before filling the opening with 57 cubic yards of "washed gravel", the timbers in the front portion of the adit dug out with the loader. Seed and fertilizer were broadcast on the 0.01 acre access road. Straw mulch was crimped into the seeded area.

7. DM 58 - Baxter removed the fence around this shaft on 10-17-91. An access trail to this shaft was built from an established road up the nose of the ridge on 4-8-92. The Terex 14 yard scraper was used to stockpile "washed gravel" near the origin of the access trail. The JD 755 loader was used to transport the gravel up the trail to the opening. "Washed gravel" was dumped slowly into the shaft. After the fill reached the bottom of the timbered section, a worker was able to stand on the top of fill and remove the timbers. All wood was neatly stacked near the shaft per the landowner's instructions. The depression below the shaft was also filled with "washed gravel" instead of using material cut from the lip of the shaft. As determined by load count 162 cubic yards of "washed gravel was consumed. On 4-10-92 the access trail to DM-58 was seeded, fertilized. The majority of the crimping was done with the 580 backhoe and crimper. Some of the steeper areas had to be crimped by hand. The access trail and stockpile acreage was 0.13 acres.

8. DM 59 - On 4-7-92 Baxter Construction built a short access trail to the base of the trench at this site using the JD 755 loader. The 580 backhoe was used to excavate what appeared to be a small opening at the south end of the trench. As the opening was excavated a large adit opened up. The 580 backhoe was used to stow gravel in the opening. A total of 126 cubic yards was placed in the adit and trench. No revegetation was required on the trench area; however, access disturbance of 0.02 acres was seeded, fertilized and mulched.

9. DM 60 - Baxter Construction built an access road to DM-60 using a JD 755 loader on 4-7-92. On this same day the contractor caved in the roof on DM-60 and backfilled the related depression with 85 yards of "washed gravel". Gravel was hauled by scraper to a stockpile located in a road cut below the Wallace waste dump. The contractor used his loader to shuttle material from the stockpile to the opening. On 4-10-92 the access road to this site was regraded using the 580 backhoe. The 0.05 acres of access disturbance was seeded, fertilized and mulched on 4-10-92. Mulch crimping was done by hand.

10. DM 61 - On 3-30-92 Baxter Construction cut an access road from the stockpile site below the Wallace dump to DM-61. The access road was 408' in length and 18' wide. On April 1,2,6,and 7, 1992, the contractor used the JD 755 loader to haul gravel to DM-61 from the stockpile area below the Wilson Mine dump. As determined by load count, approximately 601 cubic yards of "washed gravel" was placed in this opening. On 4-13-92 the access road to this site was regraded using the 580 backhoe. The 0.17 acre area disturbed for access was seeded, fertilized and mulched.

11. DM 62 - On 4-9-92 Baxter Construction fabricated the bulkhead for the shaft on site. A piece of 3/8" steel plate reinforced with grader teeth welded to the back was used as the main portion of the bulkhead. Two 5/8" lifting eyes were welded to the plate and a large turnbuckle and length of chain was secured to each eye. The other ends of the chains were secured to a 6-inch I-beam which was positioned over the opening. The bulkhead was then lowered into the shaft to a position 5-9 feet below the collar. As the turnbuckles were tightened, the bulkhead was turned so that it wedged into overhanging rocks. Pieces of 1/2" metal plate were then welded into place to completely seal the irregular shaped opening. On 4-10-92, 5½ cubic yards of premixed concrete was delivered to the site. The concrete was pored into the bucket of the JD 755 loader and then hauled to the shaft requiring several trips. The concrete completely covered the I-beam and chain support. The concrete was reinforced as specified in the plans. On 4-13-92 the access road to the shaft was regraded and revegetated. A straw mulch was hand crimped into the seeded area.

4.4.10 Hillside Site

On October 24-25, 1991, the contractor excavated the adit entrance and removed mine timbers and other debris from the excavated area. At that time a base was also prepared for the 36" X 30 foot access culvert which was installed on 11-14-91. The CMP was secured in-place with fill and cut areas were graded to approximate 2H:1V slopes on 11-15-91. A track loader was the primary piece of equipment used in these tasks. On 4-6-92 the contractor installed the prefabricated gate on the 36" CMP. Installation was according to specifications and all bolt threads were pared over to prevent removal.

4.4.11 Wadams Site

1. DM 52 - On 11-15-91, Baxter plugged the openings at DM 52. The operation was confined to pushing dump material into the opening with the track loader and then rough grading the cut and fill areas. On 4-10-92 two men completed the revegetation work at this site. Seed, fertilizer and mulch were spread over 0.04 acres by hand. Crimping was completed by hand due to the steep slope conditions.

2. DM 53 - Baxter Construction completed the specified work over a five day period beginning on November 11, 1991 and ending on November 14, 1991. The plan objective at DM 53 were met with some modification of the plans.

   First, due to difficult access the landowner agreed to accept unclassified materials which could be obtained near the site as an substitute for the "washed gravel" which he had requested after rejecting the initial plan to utilize material from the large dump. Consequently all backfilling requirements were met by recontouring those areas adjacent to the openings.

Second, Baxter Construction fabricated the steel backfill retainment curtain, planned for Opening A, using steel plates welded over an I-beam frame. All beams were 6 inch X 4 inch wide-flange I-type beams. The vertical members were spaces approximately 3 feet apart. Baxter dug the area in front of the opening down several feet and mounded up material along the lip of the opening. The mound provided a backing for the lower portion of the curtain. The curtain was also anchored in a keyway. With these adjustments the vertical beams ended up being 25 feet long.

After installing the curtain, the site was completely regraded to cover the curtain and eliminate or plug each of the other openings. The fence surrounding the site was reinstalled as an additional protective measure. After the final inspection a change order was issued to broadcast seed and fertilizer on the site.

3. During construction an additional opening was located in a road cut near DM 53. This opening was exposed and backfilled with large rock excavated from the road cut. No revegetation was required.

4.4.12 French Site

All specified openings at the French Site were backfilled on 11-15-91 utilizing the 755 track loader. Fill material was excavated from the adjacent dumps and was generated by regrading the area surrounding the openings. Due to the winter shut-down the site was not revegetated until April 9, 1992 when the 0.08 acres of disturbance was seeded, fertilized by the broadcast method. All crimping of mulch was done with the contractors 580 backhoe and crimper.

4.4.13 Box X Site

1. Box X Lower Area - On 4-10-92 Baxter Construction moved to the Box X area. All debris were collected from the disturbed area and piled near the cabin following the claim holder's instructions. The JD 755 loader was used to regrade the dump and other disturbed areas. All seed and fertilizer was spread by the broadcast method. Crimping of mulch was done with the 580 backhoe and crimper. A total of 0.15 acres was revegetated at the site.

2. Box X2 Shaft -The contractor walked his JD 755 loader to this site with very little disturbance. Baxter then used the JD 755 loader to the push mine dump surrounding the shaft into the opening and to regraded the area. Seed and fertilizer were spread by hand. Crimping of straw mulch was also done by hand. A total of 0.05 acres was disturbed and revegetated. All work was accomplished on 4-10-92.

4.4.14 Bon Accord Site

This site was withdrawn from the project at the landowner's request.

4.5 Quantities Used

Item	Amount	Unit Cost
Close mine opening	85	$ 752.59
With unclassified backfill	59 openings	$ 434.52/opening
With washed gravel backfill	2757 cu yd	$ 11.01/cu yd
With washed gravel substitute	357 cu yd	$ 22.35/cu yd
Rock wall adit closures	1	$ 300.00
Reinforced concrete plug	1	$2100.00
Premix concrete	5½ cu yd	$ 381.82/cu yd
36-inch access culvert	95 ft	$ 45.56/ft
Steel backfill retainment curtain	2	$ 800.00
Concrete shaft closure section	6	$1329.00/section
	342 sq ft	$ 23.32/sq ft
Fertilize, seed & mulch	4.31 Ac	$1500.00/Ac
Water		$ 20.00/Kgal

Note that the reported unit costs may include various associated costs which may be very site specific.

5. PAYMENT REQUESTS

5.1 Pay Request

Copies of the payment requests are included in Attachment 3.

5.2 Cost per Site

Site Name	Openings	Amount
Hand Placer	9	$ 2,760.00
Southwest Section 5	13	5,510.00
East Half Section 5	4	1,745.00
Blue Grass	18	10,920.00
Gold Bug	17	24,850.00
Washington	4	9,479.00
Pioneer	1	1,902.50
Senator	3	1,770.00
Golden Leaf	11	18,778.25
Hillside	1	1,932.50
Wadams	6	11,485.00
French	4	1,965.00
Box X	1	1,130.00
Added	3	1,440.00

5.3 Total Project Cost

The original contractor's bid for construction was $95,247.25. Change orders were issued for a total of $420.00 bringing the total construction cost to $95,667.25. The engineering cost for the Bannack Mining District project was $ 127,586.57. This cost includes ownership determination, inventory, preparation of a community relations plan, preparation of an NCP plan, $8,738.79 for a cultural resource assessment prepared by GCM, preparation of preliminary design documents for landowner and DSL review, landowner consent, final design revisions, preparation of bid documents, construction supervision, construction administration, final report preparation, and project administration. Total project cost was therefore $223,253.82. Approximately 70-percent of the cost was spent for design, construction, and construction administration. An analysis of the engineering costs versus construction costs is presented in Attachment 4.

6. PROJECT SUMMARY

6.1 Summary of Project

The contractor was able to perform the desired reclamation activities with heavy equipment at all but four sites. Openings at the remaining three sites were closed with hand work. Disturbance caused by equipment access was reclaimed by measures ranging from reseeding and fertilizing to regrading, seeding, fertilizing and mulching. The contractor closed 85 mine openings by backfilling. Ten additional mine openings, which could not be closed by backfilling due to ownership restrictions, access, or size, were sealed with closure devices:

1) Substantial rock plugs in two openings;
2) Rockwall in one opening;
3) Reinforced concrete plug installed in deep raise;
4) Concrete bridge section closure over one shaft;
5) Access culverts with locking grates installed in three adits; and,
6) Metal curtains were placed at the entrances to two opening.

The contractor began the project on October 15, 1991 and was allotted 60 days to complete the job. Initially the project was to be completed by December 13, 1991; however, winter weather cause intermittent work stoppages and eventually a winter shut-down on November 18, 1991. Work resumed on March 24, 1992 and continued through April 15, 1992. Change orders issued after this date delayed project completion by adding one additional days work. Substantial completion for the project was on April 30, 1992. The initial project requirements were completed in 41 day of the 60 allotted days per the revised schedule. The additional day's work was completed on the 57th day of the revised schedule. The contractor was actually worked on 33 day.

6.2 Site Condition after Completion

During the project all eligible openings for which consent could be obtained were sealed to prevent casual entry. However, consent was not granted on all inventoried sites and there are other openings associated with recent or pending mining activities. Some of these openings are shallow and are located in competent rock. These pose no significant hazard. Two large subsidence craters and a shaft present obvious hazards; but, are at least fenced. DM 42 in the Gold Bug area provides access to extensive underground working. This site could not be closed due to the probability that it would be activated in the near future. The Pricilla Mine could not be sealed because it has been used as a recent exploration adit. There is a wooden door on this adit which could be maintained by the mine owner. The opening at the Bon Accord must also be considered a hazardous opening. There are at least three hazardous openings within the boundaries of the State Park.

At the Hand, Bluegrass and French sites the dumps and backfilled openings were almost totally blended into the natural terrain. At all other sites the mining character of the site was generally preserved by minimizing disturbance to the local mine dumps. The Golden Leaf and Gold Bug sites were filled with coarse material and were not revegetated so that they could be easily located by the landowner.

6.3 Maintenance or Follow-up

Due to the general lack of soil and the arid condition in this area of Southwest Montana, revegetation success is expected to be limited. Consequently, revegetation progress should be monitored.

6.4 As-Built Drawings

The complete series of 29 drawings prepared for the bid package has been modified to reflect the as-built status. These drawings are presented on the following pages.

BANNACK MINING DISTRICT PROJECT

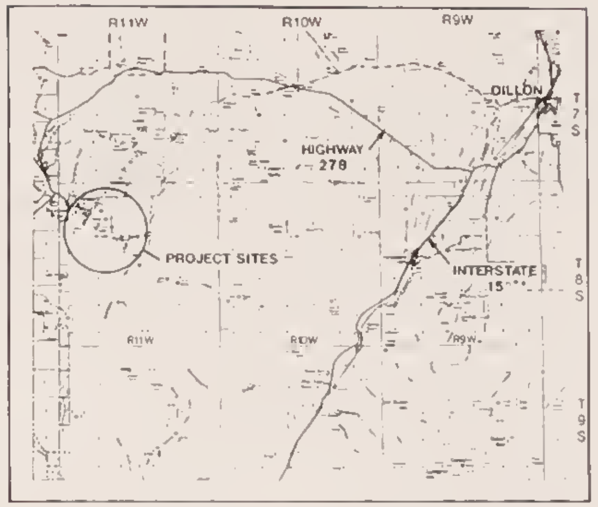
LOCATED IN
BEAVERHEAD COUNTY, MONTANA

DSL/AMRB 91-007

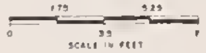
PREPARED FOR

MONTANA DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU

STATE LOCATION MAP



AREA MAP



LANDOWNERS AND CONTACT PERSONS

ROB TOWNER
Box 4900 Bannack Road
Dillon, MT 59725
Phone: 406/834-3411
or
P.O. Box 863
Hamilton, MT 59840
Phone: 406/363-3281

RESOLUTE RESOURCES
666 Burrard Street
Vancouver, B.C. V6C 2X8
Canada
Phone: 604/682-5826

HANS ANDERSEN
524 S. Pacific St
Dillon, MT 59725
Phone: 406/683-5844

DARRELL FRIED & MARILYN SIMMONS
2005 Kober Place
Billings, MT 59102
Phone: 406/259-9501

U.S.A. BUREAU OF LAND MANAGEMENT
c/o Jim Lewis
Dillon District
Ibey Building
P.O. Box 1048
Dillon, MT 59725
Phone: 406/683-2337

ROE MINERAL INC.
c/o Elizabeth Roe Wilkins, et al
7018 32nd Ave. N.E.
Seattle, WA 98115
Phone: 206/523-2178

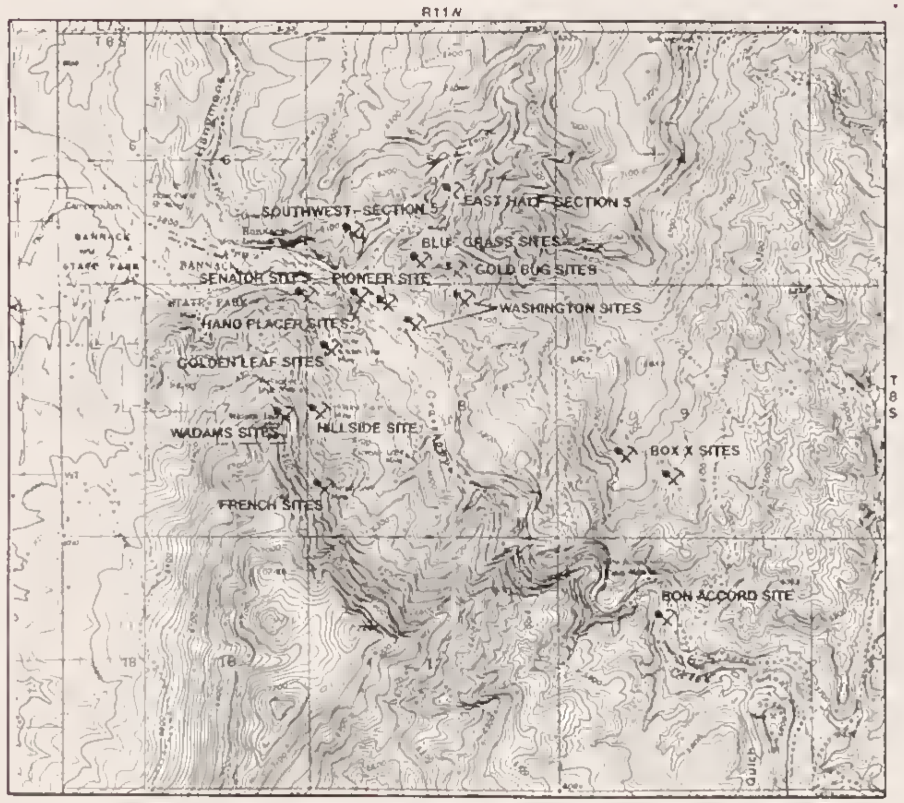
FIELDING GRAVES ESTATE
c/o Viola Graves, et al
304 Arizona
Dillon, MT 59725
Phone: 406/683-2685

GILBERT INNES
P.O. Box 1428
Polson, MT 59860
Phone: 406/883-4731

TED HAZELBAKER
Southern Montana Abstract & Title Company
P.O. Box 390
Dillon, MT 59725
Phone: 406/683-4445

GARY R. DUMKE & JACK E. DUMKE
c/o Jack E. Dumke
P.O. Box 481
Dillon, MT 59725
Phone: 406/683-4736

GLENN TROUTMAN
21 North Holly Ave.
Fox Lake, IL 60020



SITE LOCATION MAP

INDEX

DESCRIPTION	SHEET NO.
COVER SHEET	1
SITE MAP	2
HAND PLACER SITE PLANS	3–5
SOUTHWEST-SECTION 5 SITE PLANS	6–9
EAST HALF-SECTION 5 SITE PLAN	10
BLUE GRASS SITE PLANS	11–12
GOLD BUG SITE PLANS	13–16
WASHINGTON SITE PLAN	17
PIONEER SITE PLAN	18
SENATOR SITE PLAN	19
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FRENCH SITE PLAN	27
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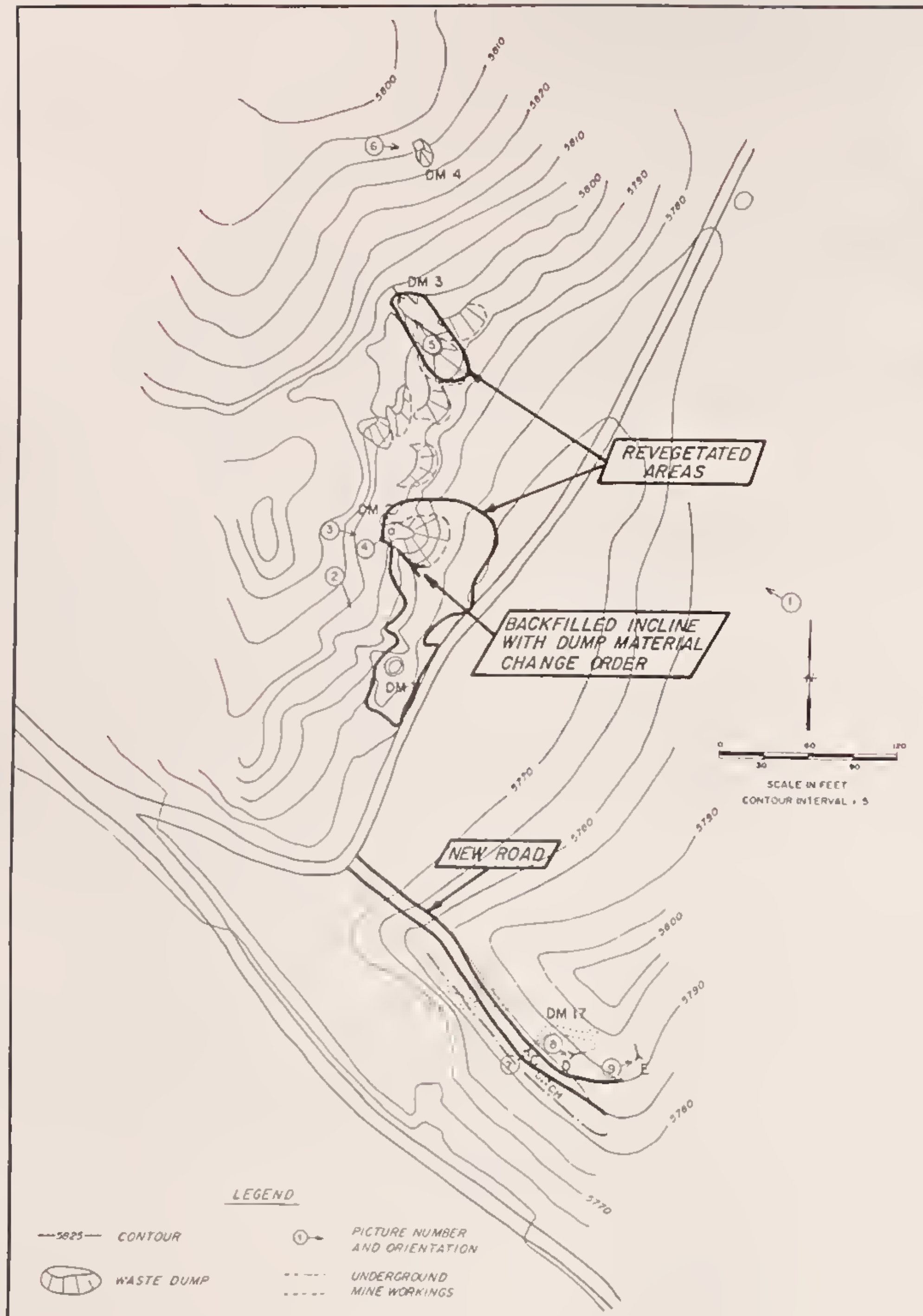
BON ACCORD SITE PLAN	29

REDUCED PRINTS APPROX. 1/2 ORIGINAL SCALE

PREPARED BY:
SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE. NORTH
BILLINGS MONTANA

SHEET 1 OF 29



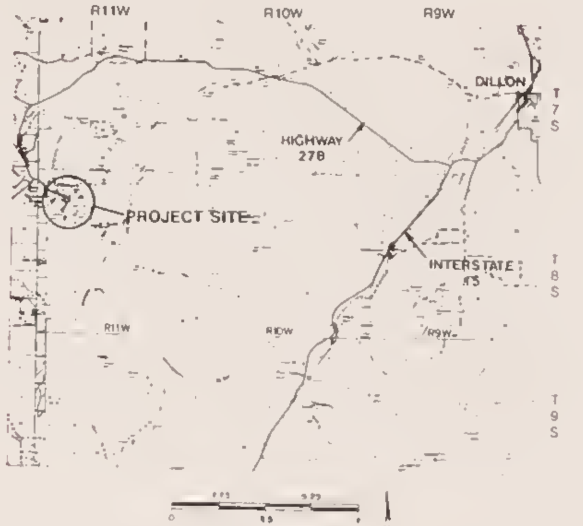
① PICTURE 1 LOOKING NORTHWEST ACROSS THE DRAINAGE AT DM 1, 2, 3, AND 4

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

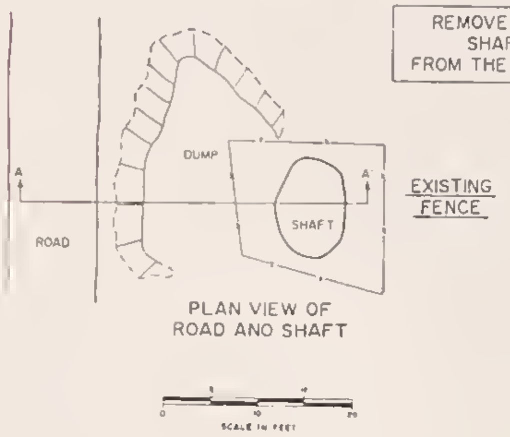
CONSTRUCTION IS LIMITED TO THE AREA SHOWN ON THIS TOPOGRAPHIC MAP

② PICTURE 2 IS A VIEW OF DM 1 LOOKING DOWNHILL AND TO THE SOUTH

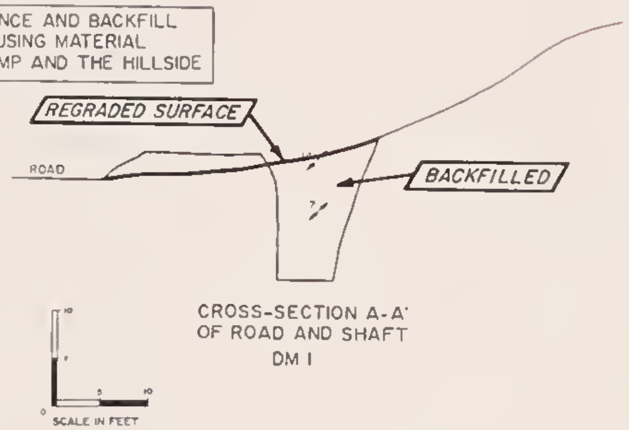
STATE LOCATION MAP



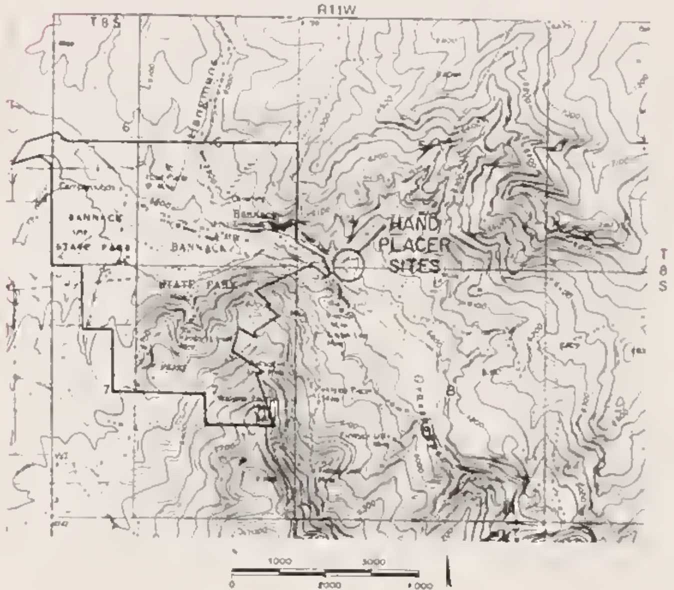
VICINITY ACCESS MAP



PLAN VIEW OF ROAD AND SHAFT


REMOVE FENCE AND BACKFILL SHAFT USING MATERIAL FROM THE DUMP AND THE HILLSIDE
REGRADED SURFACE
ROAD
BACKFILLED
SCALE IN FEET

CROSS-SECTION A-A' OF ROAD AND SHAFT DM 1



SITE LOCATION MAP

LEGEND

—5825—	CONTOUR	⊙→	PICTURE NUMBER AND ORIENTATION
	WASTE DUMP	- - - -	UNDERGROUND MINE WORKINGS
— —	DRAINAGE	—<	OPEN ADIT

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
SHAFT DM 1	7-12' x 7-14' x 12'D	BACKFILL W/ DUMP MATERIAL	38 CU. YDS
SHAFT DM 2	4 x 5 x 30'D	BACKFILL W/ DUMP MATERIAL	47 CU YDS
ADIT DM 3	18"W x 6.9'H	BACKFILL W/ DUMP MATERIAL	3 CU YDS
SHAFT DM 4	6' x 6' x 7'D	BACKFILL W/ DUMP MATERIAL	9 CU YDS
ADIT DM 17A ADIT DM 17B	4.5'W x 4'H 3'W x 5'H	BACKFILL BOTH ADITS AND TRENCH W/ DUMP MATERIAL	192 CU. YDS
ADIT DM 17C	5'W x 5'H x 18'L	EXCAVATED ROAD CUT	17 CU YDS
ADIT DM 17D	4'W x 4'H x 12'L	BACKFILL W/ ROOF MATERIAL	7 CU. YDS
ADIT DM 17E	3'W x 3'H x 7'L	BACKFILL W/ ROOF MATERIAL	2 CU YDS
DEBRIS REMOVAL	ALL SITES	REMOVE AND DISPOSE	5 PICKUP LOADS
WATER	BACKFILL AND ROADS	FOR COMPACTION AND DUST SUPPRESSION	0 KGAL
REVEGETATION OF 0.24 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

WORK DESCRIPTION

- REMOVE ALL DEBRIS AND TO THE EXTENT POSSIBLE REMOVE THE TIMBERS FROM ALL OPENINGS PRIOR TO BACKFILLING
- SHAFT DM 1 - REMOVE FENCE AND BACKFILL THE SHAFT WITH DUMP MATERIAL. REVEGETATE 0.02 ACRES
- SHAFT DM 2 - REMOVE FENCE, PULL TIMBERS TO THE EXTENT POSSIBLE AND BACKFILL THE SHAFT AND DEPRESSION REVEGETATE 0.06 ACRES
- ADIT DM 3 - CAVE THE BANK OVER THE OPENING AND COMPLETELY PLUG THE ADIT. REVEGETATE 0.01 ACRES
- SHAFT DM 4 - COMPLETELY BACKFILL THE SHAFT USING DUMP MATERIAL AND LOOSE ROCK. REVEGETATE 0.07 ACRES.
- ADITS DM 17 A & B - BACKFILL THE AREA IN FRONT OF ADITS A & B BURYING THE ADIT ENTRANCES REVEGETATE 0.07 ACRES
- ADIT DM 17 C - COMPLETELY BACKFILL THE OPENING BY CAVING THE ROOF. REVEGETATE 0.01 ACRES.
- ADIT DM 17 D - COMPLETELY BACKFILL THE OPENING BY CAVING THE ROOF REVEGETATE 0.02 ACRES
- ADIT DM 17 E - COMPLETELY BACKFILL THE OPENING WITH LOOSE MATERIAL. REVEGETATE 0.01 ACRES.

ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE. THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

NOTICE

AN ABANDONED MINE UNDERLIES THIS SITE. MANY POTENTIAL HAZARDS EXIST. THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN. CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

HAND PLACER
(1 of 3)
SECTIONS 5 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY LNR
APPROVED BY DM

REVISIONS NO	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO

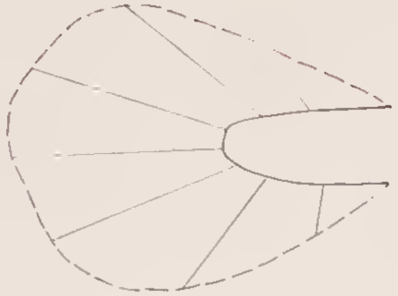
SHEET NO 3 of 29

③ PICTURE 3 IS LOOKING DOWN TOWARD DM 2 THE SHAFT IS IN THE LOWER CENTER OF THE PICTURE AND A 6 FOOT DEEP DEPRESSION IS IN THE LOWER LEFT

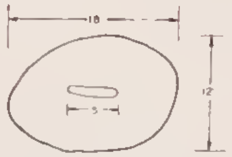
④ PICTURE 4 IS LOOKING DOWN THE TIMBER LINED, 31 FOOT DEEP SHAFT AT DM 2

⑤ PICTURE 5 IS LOOKING AT THE SOIL BANK WHERE DM 3 IS LOCATED.

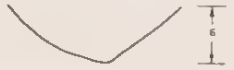
⑥ PICTURE 6 SHOWS THE 6 × 6 SHAFT AT DM 4 IT IS 7 FEET DEEP



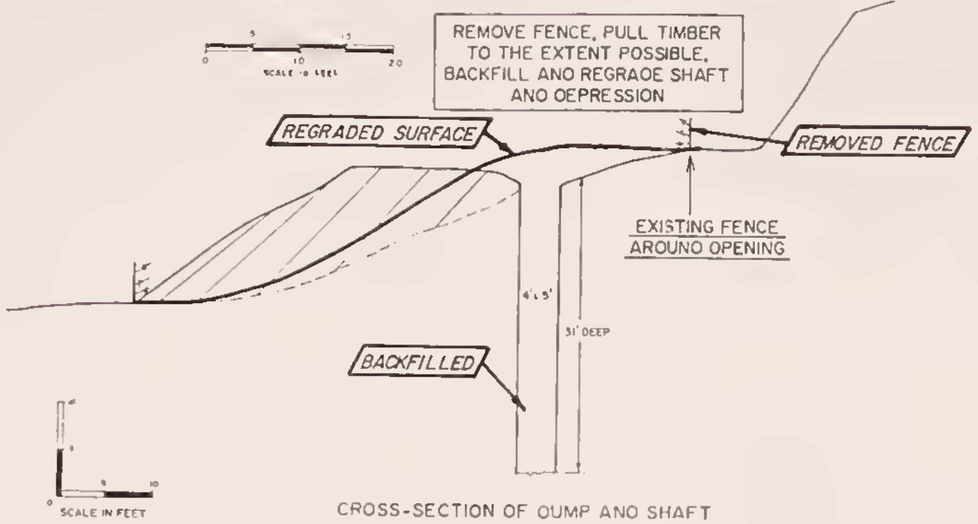
PLAN VIEW OF DUMP



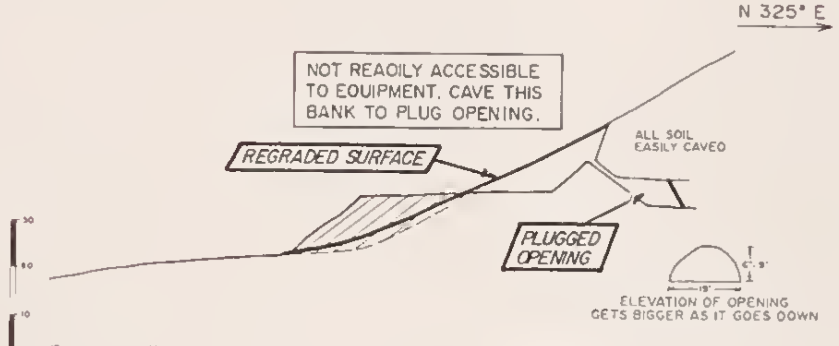
PLAN VIEW OF DEPRESSION NEXT TO SHAFT



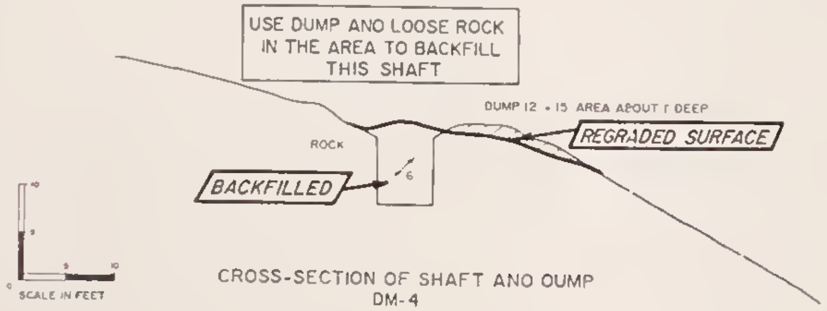
CROSS-SECTION OF DEPRESSION NEXT TO SHAFT


REMOVE FENCE, PULL TIMBER TO THE EXTENT POSSIBLE, BACKFILL AND REGRADE SHAFT AND DEPRESSION
REGRADED SURFACE
REMOVED FENCE
EXISTING FENCE AROUND OPENING
4' x 5'
31' DEEP
BACKFILLED
SCALE IN FEET

CROSS-SECTION OF DUMP AND SHAFT
DM-2


N 325° E
NOT READILY ACCESSIBLE TO EQUIPMENT. CAVE THIS BANK TO PLUG OPENING.
REGRADED SURFACE
ALL SOIL EASILY CAVED
PLUGGED OPENING
15'
ELEVATION OF OPENING GETS BIGGER AS IT GOES DOWN
SCALE IN FEET

CROSS-SECTION OF DUMP AND ADIT
DM-3


USE DUMP AND LOOSE ROCK IN THE AREA TO BACKFILL THIS SHAFT
DUMP 12 × 15 AREA ABOUT 1' DEEP
ROCK
REGRADED SURFACE
BACKFILLED
6
SCALE IN FEET

CROSS-SECTION OF SHAFT AND DUMP
DM-4

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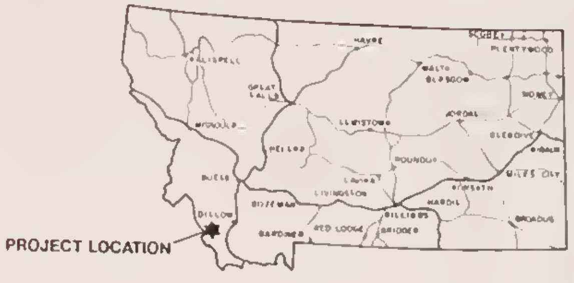
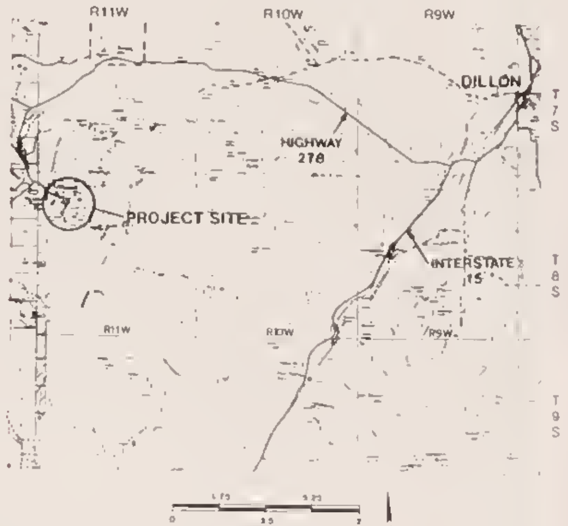
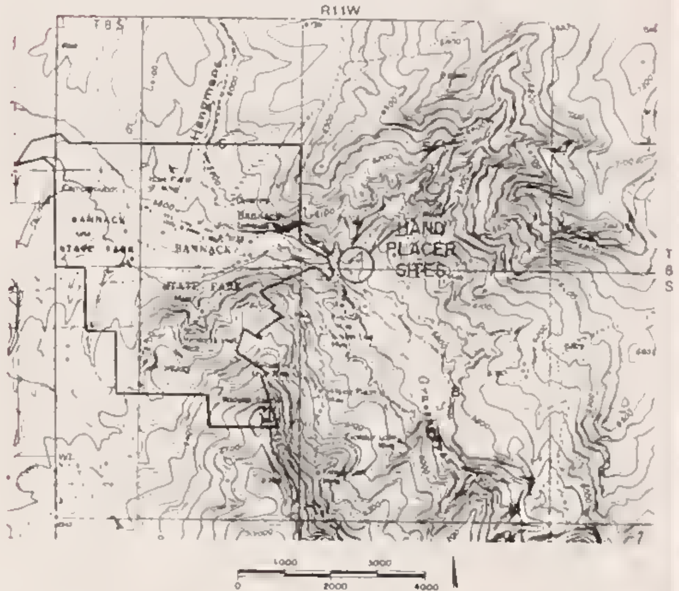


STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

HAND PLACER
(2 of 3)
SECTIONS 5 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

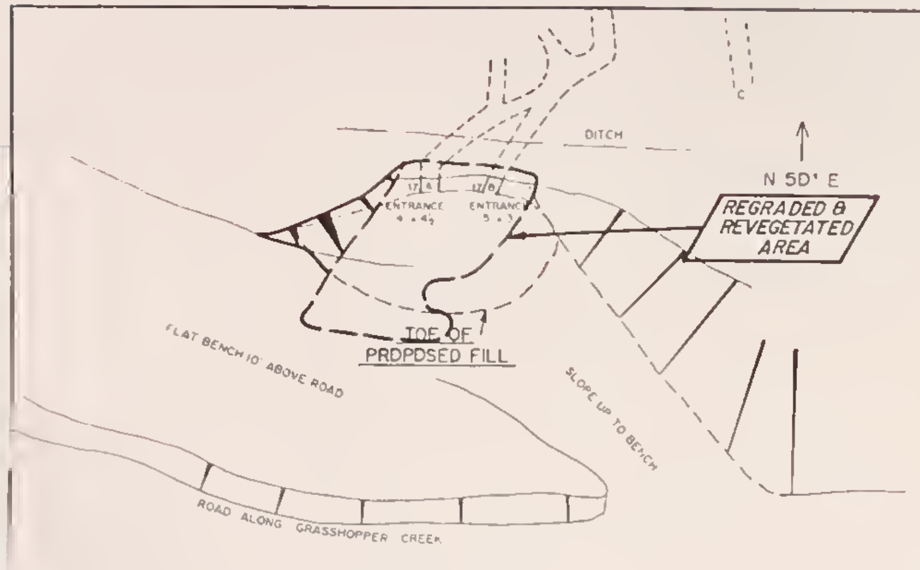
STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

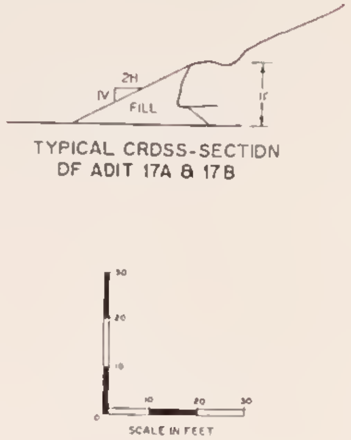
DATE March 1991
DRAWN BY LNR
APPROVED BY CM

REVISIONS NO	DATE	BY
1	6/20/91	DLO
As Built	April 1992	DLO

SHEET NO 4 of 29



PLAN VIEW OF ADITS 17A & 17B



TYPICAL CROSS-SECTION OF ADIT 17A & 17B

NOTICE

AN ABANDONED MINE UNDERLIES THIS SITE MANY POTENTIAL HAZARDS EXIST THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES

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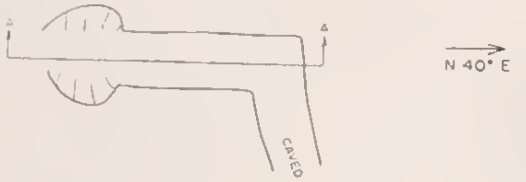
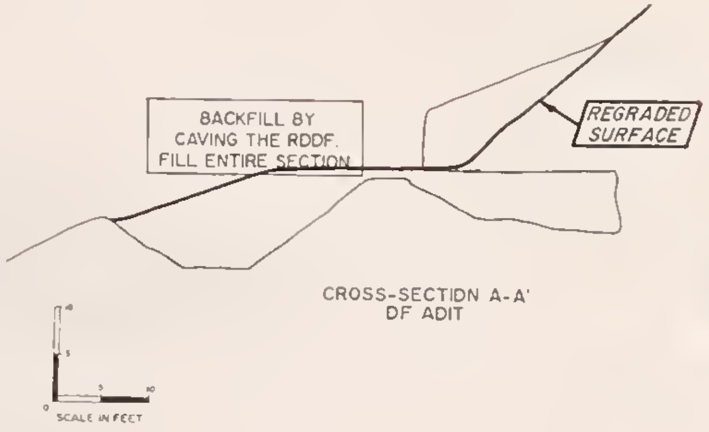


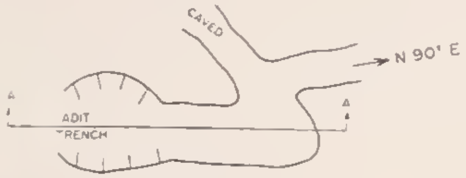
PLAN VIEW OF ADIT AND TRENCH



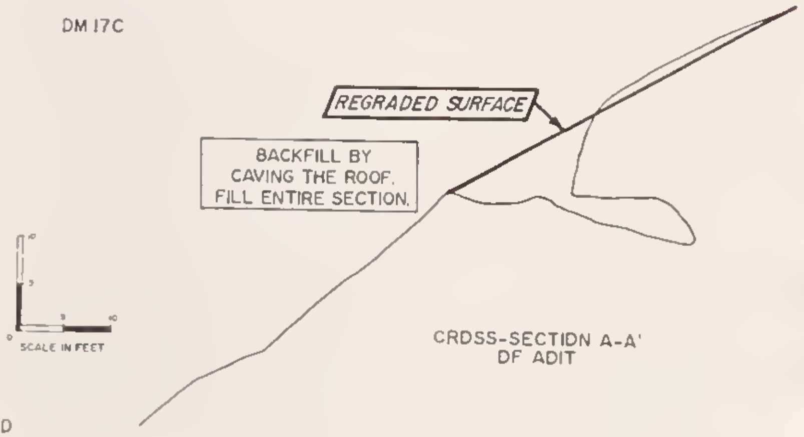
CROSS-SECTION A-A' OF ADIT

DM 17C

⑦ PICTURE 7 IS LOOKING INTO DM 17C. THE OPENING IS IN LOOSELY CEMENTED GRAVEL.

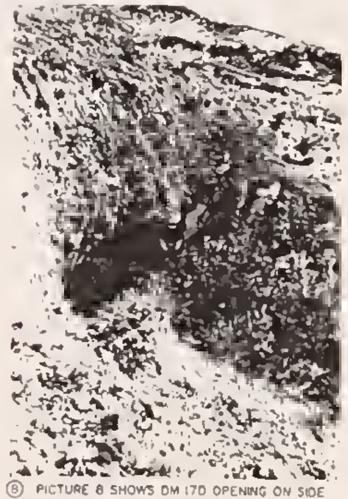


PLAN VIEW OF ADIT AND TRENCH

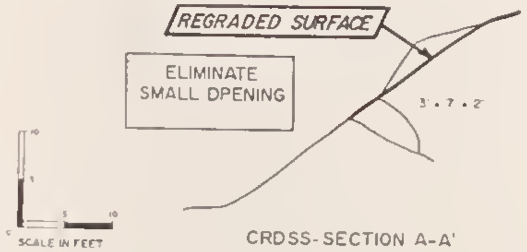


CROSS-SECTION A-A' OF ADIT

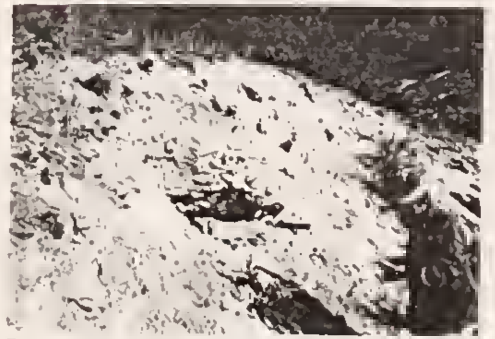
DM 17D



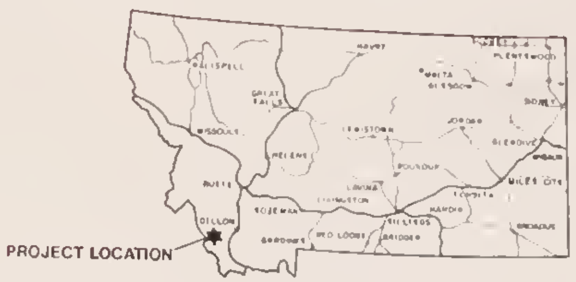
⑧ PICTURE 8 SHOWS DM 17D OPENING ON SIDE OF HILL



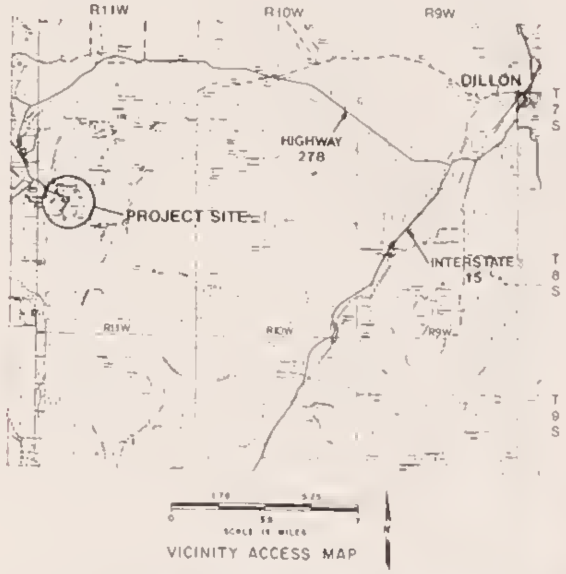
CROSS-SECTION A-A'
ADIT 17E



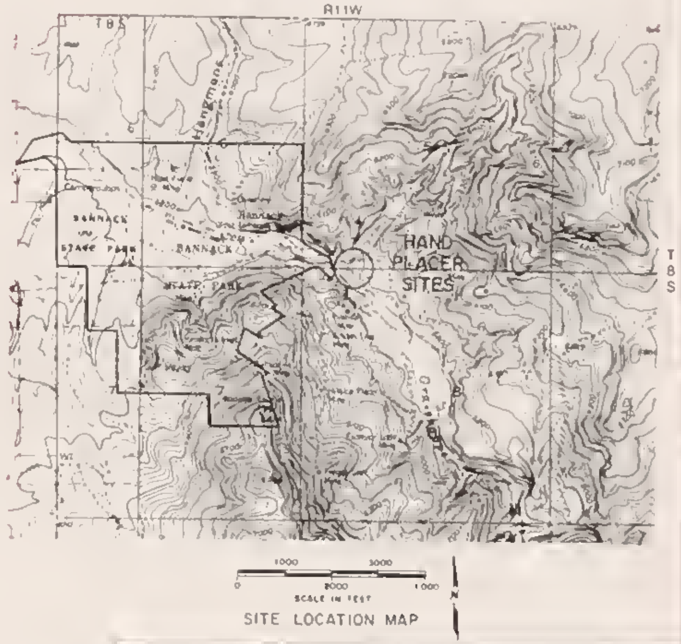
⑨ PICTURE 9 SHOWS DM 17E IN AN EXCAVATED BANK



STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

HAND PLACER
(3 of 3)
SECTIONS 5 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

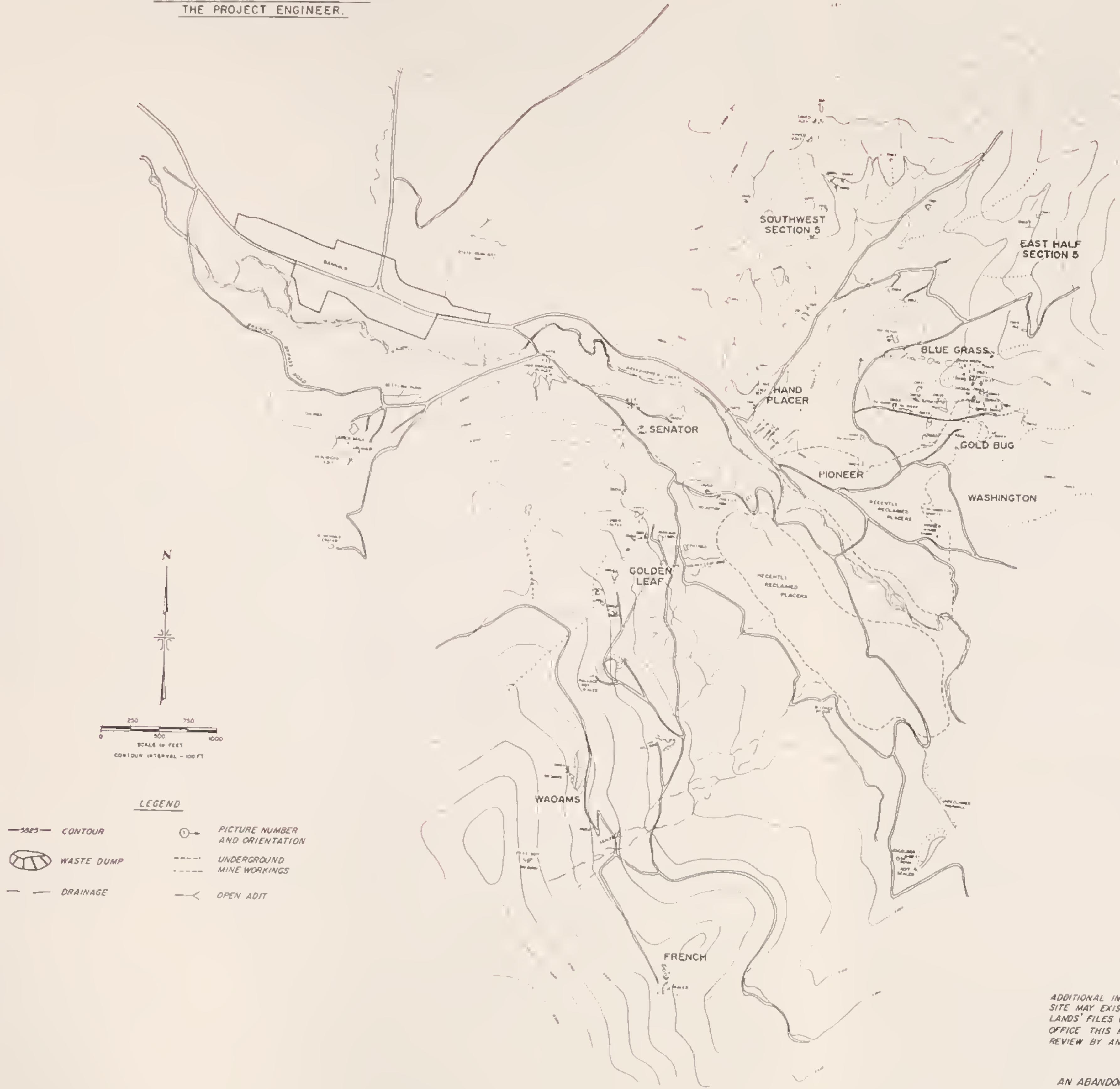
DATE March 1991
DRAWN BY LNR
APPROVED BY DM

REVISIONS

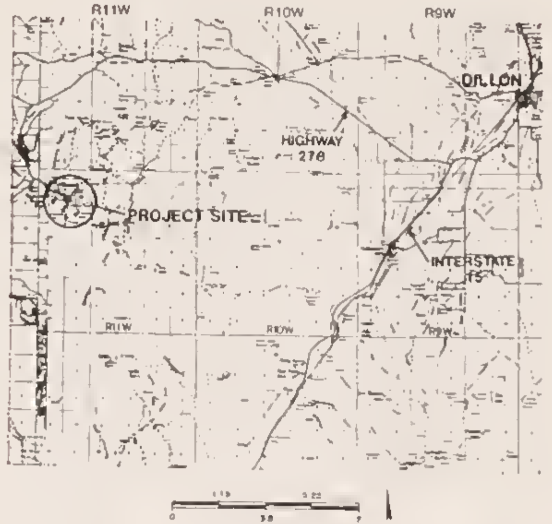
NO	DATE	BY
1	6/20/91	DLO
As Built	April 1992	DLO

SHEET NO 5 of 29

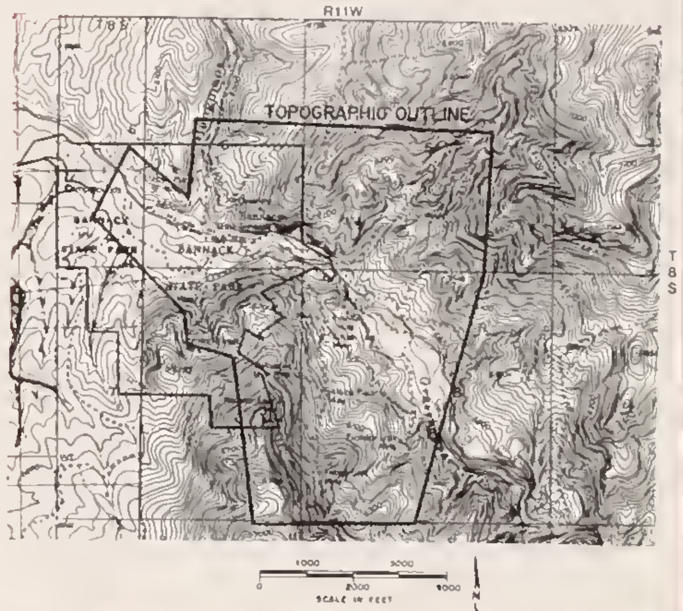
VEHICLE TRAVEL WILL BE LIMITED
TO ROUTES FLAGGED ON-SITE BY
THE PROJECT ENGINEER.



STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

NOTICE

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SITE PLAN AND GENERAL LAYOUT

SITE PLAN

SECTIONS 5, 7, 8 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

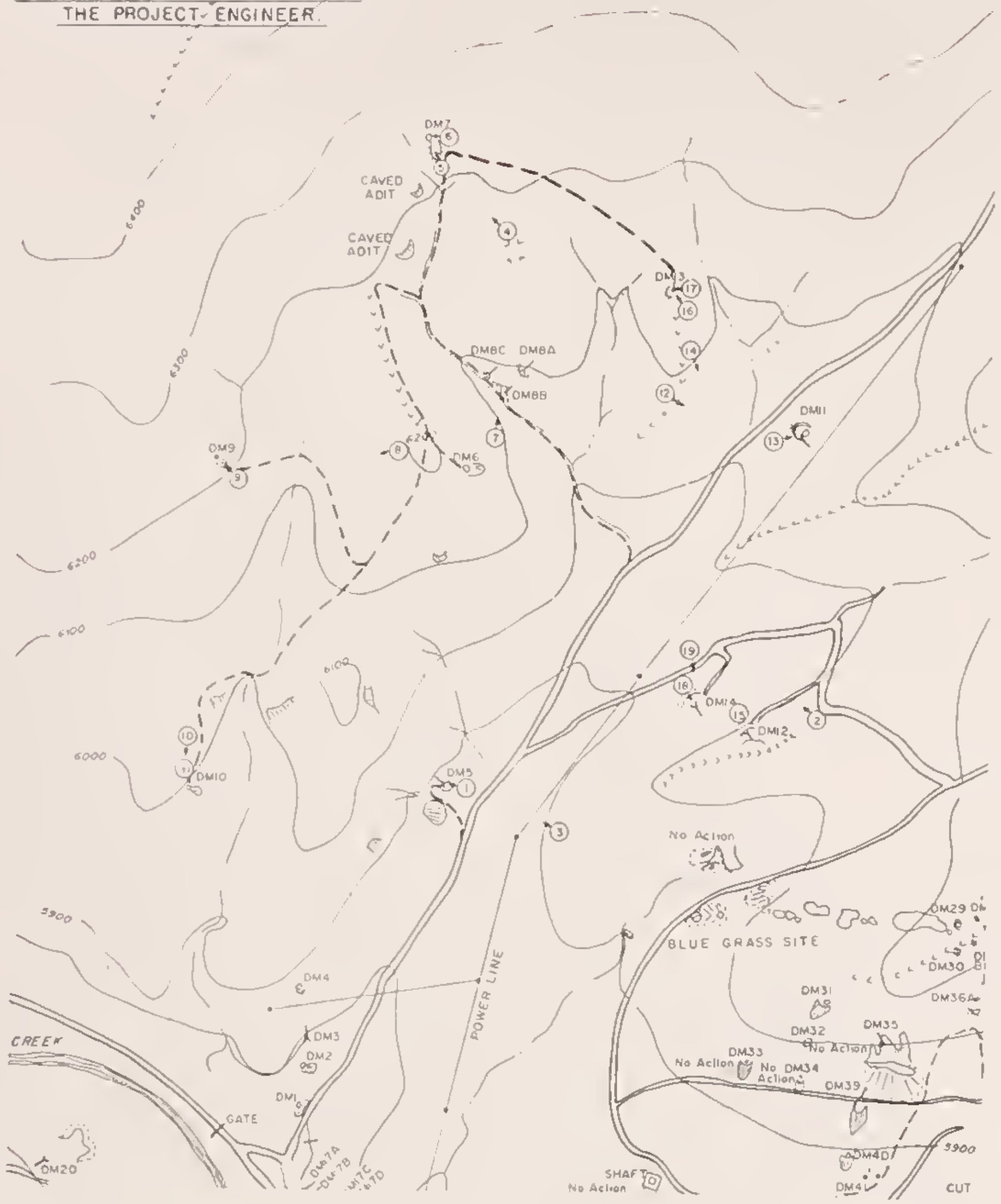
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY: DM

REVISIONS NO	DATE	BY
1	6/20/91	DLO

SHEET NO 2 of 29

VEHICLE TRAVEL WILL BE LIMITED
TO ROUTES FLAGGED ON-SITE BY
THE PROJECT ENGINEER.



PLAN VIEW

LEGEND

—5825—	*CONTOUR*	①→	*PICTURE NUMBER AND ORIENTATION*
	WASTE DUMP	- - -	*UNDERGROUND MINE WORKINGS*
— —	*DRAINAGE*	—<	*OPEN ADIT*
— — —	*FOOT ACCESS (NOTE: EQUIPMENT IS NOT PROHIBITED, HOWEVER, STEEP DIFFICULT TERRAIN IS PREVALENT.)*		

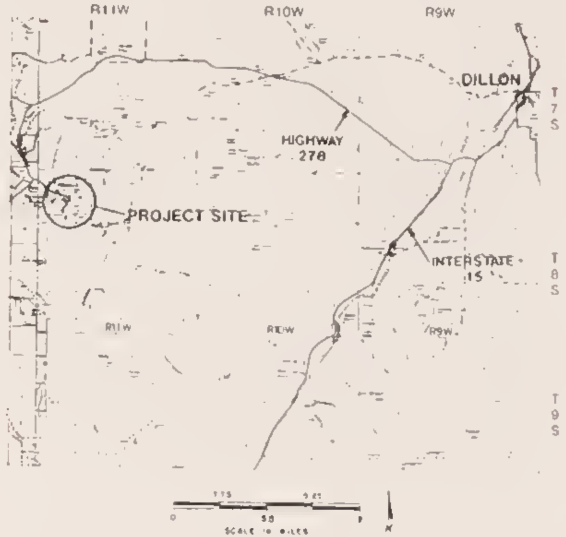
WORK DESCRIPTION

- ESTABLISH ACCESS PER EQUIPMENT REQUIREMENTS.
- REMOVE ALL DEBRIS AND VEGETATION AND TO THE EXTENT POSSIBLE REMOVE THE TIMBERS FROM ALL OPENINGS PRIOR TO BACKFILLING
- OPENINGS DM 5 THROUGH DM 11, DM 13 AND DM14 - BACKFILL EACH OPENING WITH MATERIAL.
- ADIT DM 12 - INSTALL 2 ROCK WALLS OUT OF NATIVE STONE AND MORTAR.
- REVEGETATE (SEED AND FERTILIZE) ALL DISTURBED AREAS (BACKFILLED AND BORROW AREAS). MULCH SITES DM 11 AND DM 14

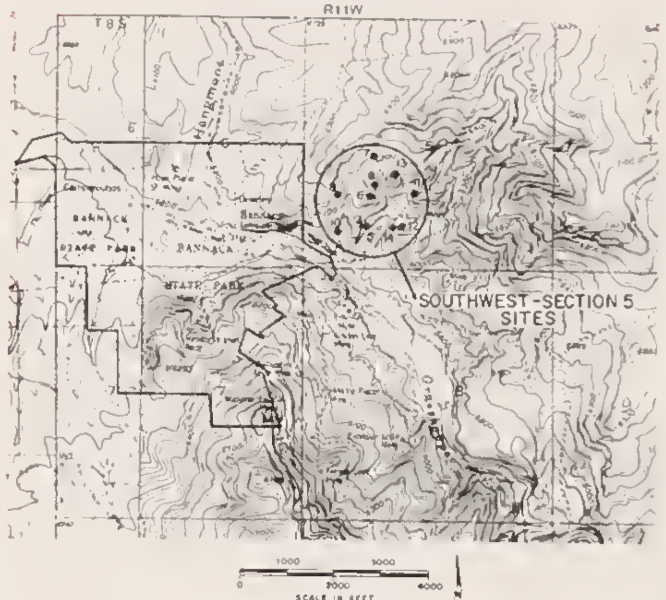
WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
ADIT DM 5	5'W x 8'H x 10'L	BACKFILL WITH MATERIAL	14 CU YDS
SHAFT DM 6	3-12' x 9-14' x 36'D	BACKFILL WITH MATERIAL	62 CU YDS
SHAFT DM 7	5-6.5' x 7-10' x 17'D	BACKFILL WITH MATERIAL	26 CU YDS
INCLINE DM 8A	3-7'W x 5'H x 17'L	BACKFILL WITH MATERIAL	23 CU. YDS
ADIT DM 8B	4.5'W x 5'H x 8'L	BACKFILL WITH MATERIAL	7 CU. YDS
ADIT DM 8C	5-7'W x 6-9'H x 5'D PLUG	BACKFILL WITH MATERIAL	14 CU. YDS
SHAFT DM 9	5.5' x 5.5' x 28'D	BACKFILL WITH MATERIAL	36 CU. YDS
SHAFT DM 10	6-13' x 8.5' x 17'D	BACKFILL WITH MATERIAL	28 CU. YDS
OPENING DM 11	2 HOLES, 1 VOID, 1 TRENCH AND 1 SUBSIDENCE	BACKFILL WITH MATERIAL	230 CU. YDS
ADIT DM 12	1 AT 3'W x 6'H AND 1 AT 6'W x 7'H	BACKFILLED	2 EACH
SHAFT DM 13	6.5' x 7' x 21'D	BACKFILL WITH MATERIAL	33 CU. YDS
ADIT DM 14	4.5'W x 5.5'H x 7'D PLUS ADIT TRENCH	BACKFILL WITH MATERIAL	72 CU. YDS
DEBRIS REMOVAL	ALL SITES	REMOVE AND DISPOSE	15 PICKUP LOADS
WATER	BACKFILL AND ROADS	FOR COMPACTION AND DUST SUPPRESSION	0 KGAL
REVEGETATION-SEED/FERTILIZE 0.65 ACRES AND MULCH 0.17 AC	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH (MULCH ONLY AT DM 11 & 14)	

STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

SOUTHWEST - SECTION 5
(1 of 4)
SECTION 5, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

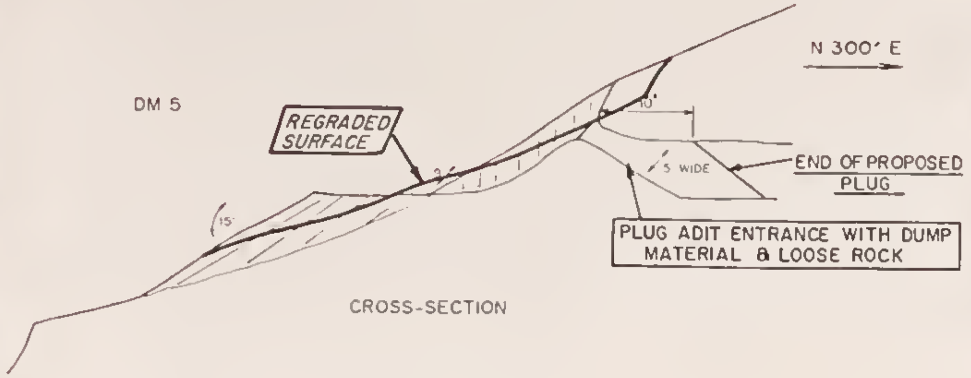
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: DLO
APPROVED BY: CM

REVISIONS NO	DATE	BY
1	6/20/91	DLO
As Built	April 1992	DLO

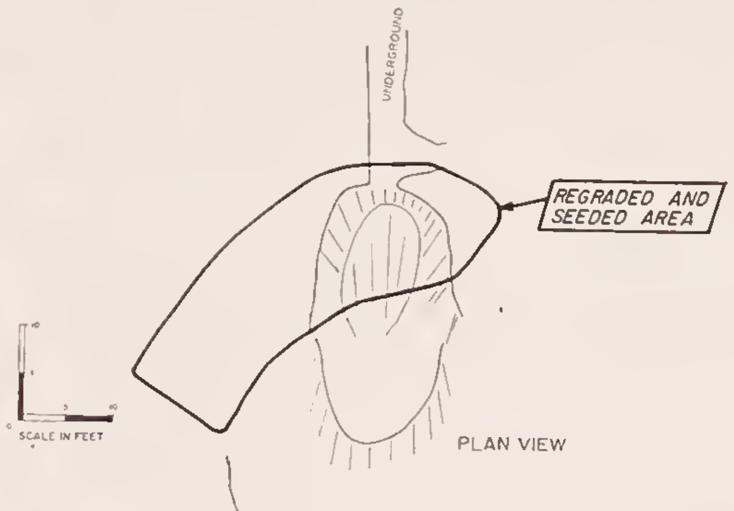
SHEET NO 6 of 29

① PICTURE 1 IS THE PARTIALLY PLUGGED ENTRANCE OF DM 5



CROSS-SECTION

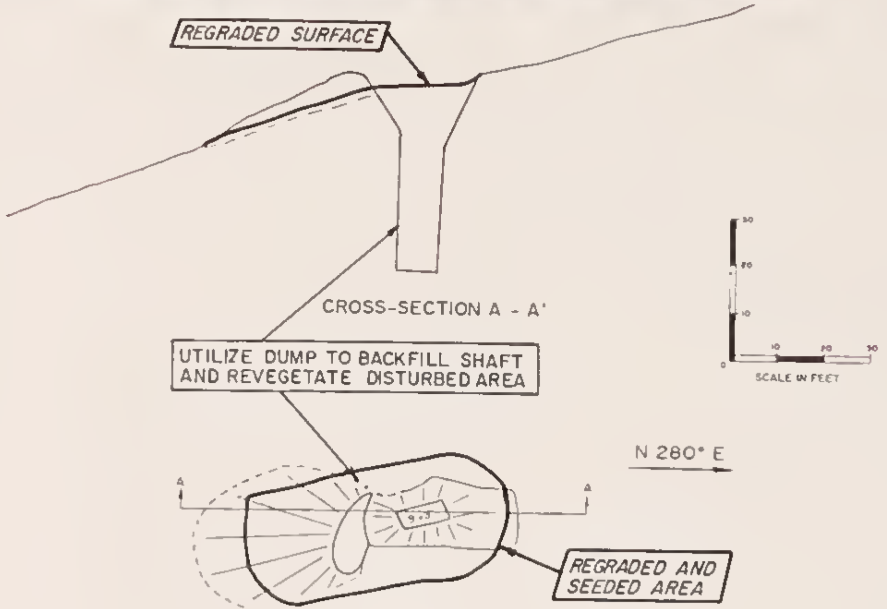
③ PICTURE 3 IS A VIEW OF DM 5 FROM ACROSS THE DRAINAGE



PLAN VIEW

DM 5

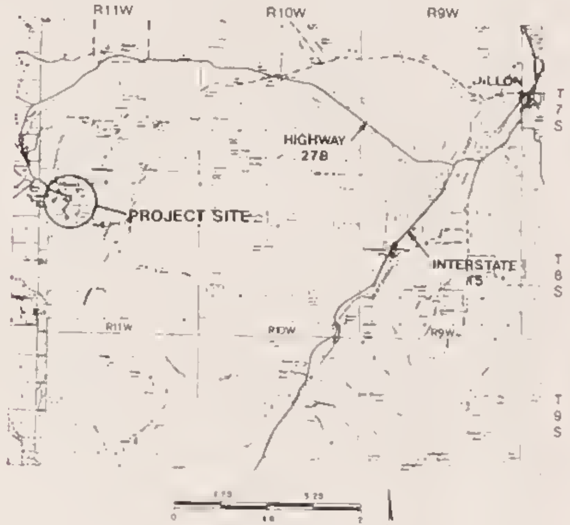
② PICTURE 2 IS LOOKING NORTH OVER THE TOP OF AN INTERMEDIATE RIDGE AT DM 6 AND SITES AROUND THIS HILL.



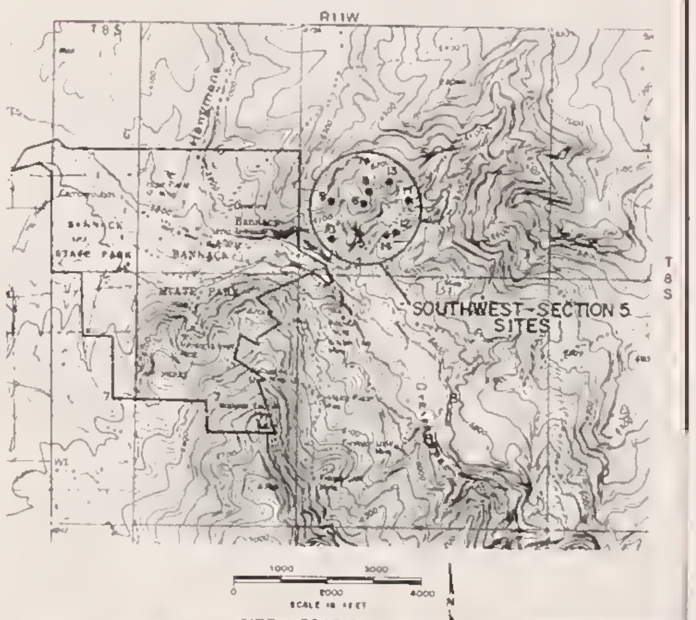
PLAN VIEW

DM 6

STATE LOCATION MAP



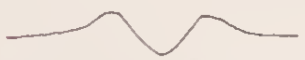
VICINITY ACCESS MAP



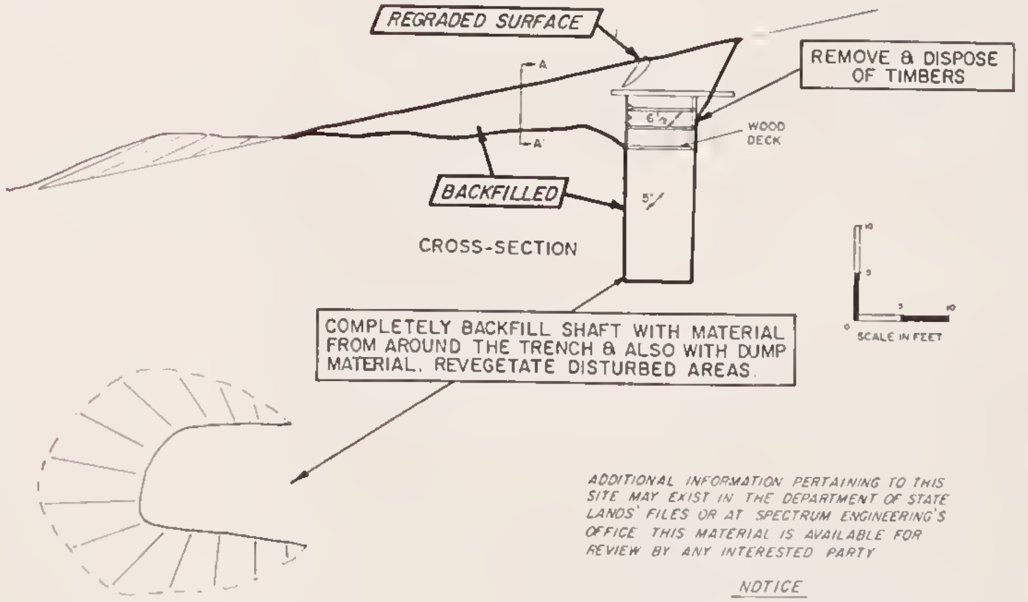
SITE LOCATION MAP

④ PICTURE 4 IS LOOKING NW FROM THE TOP OF THE HILL AT DM 7

DM 7



CROSS-SECTION A-A' OF TRENCH


REGRADED SURFACE
REMOVE & DISPOSE OF TIMBERS
A
A'
6'
WOOD DECK
BACKFILLED
5'
CROSS-SECTION
SCALE IN FEET
COMPLETELY BACKFILL SHAFT WITH MATERIAL FROM AROUND THE TRENCH & ALSO WITH DUMP MATERIAL. REVEGETATE DISTURBED AREAS.

PLAN VIEW OF DUMP

DM 7

⑤ PICTURE 5 IS LOOKING NW FROM THE DUMP AT THE TRENCH LEADING INTO DM 7

⑥ PICTURE 6 IS A VIEW OF THE WOOD STRUCTURE COVERING THE SHAFT AT DM 7

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

SOUTHWEST - SECTION 5
(2 of 4).
SECTION 5, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

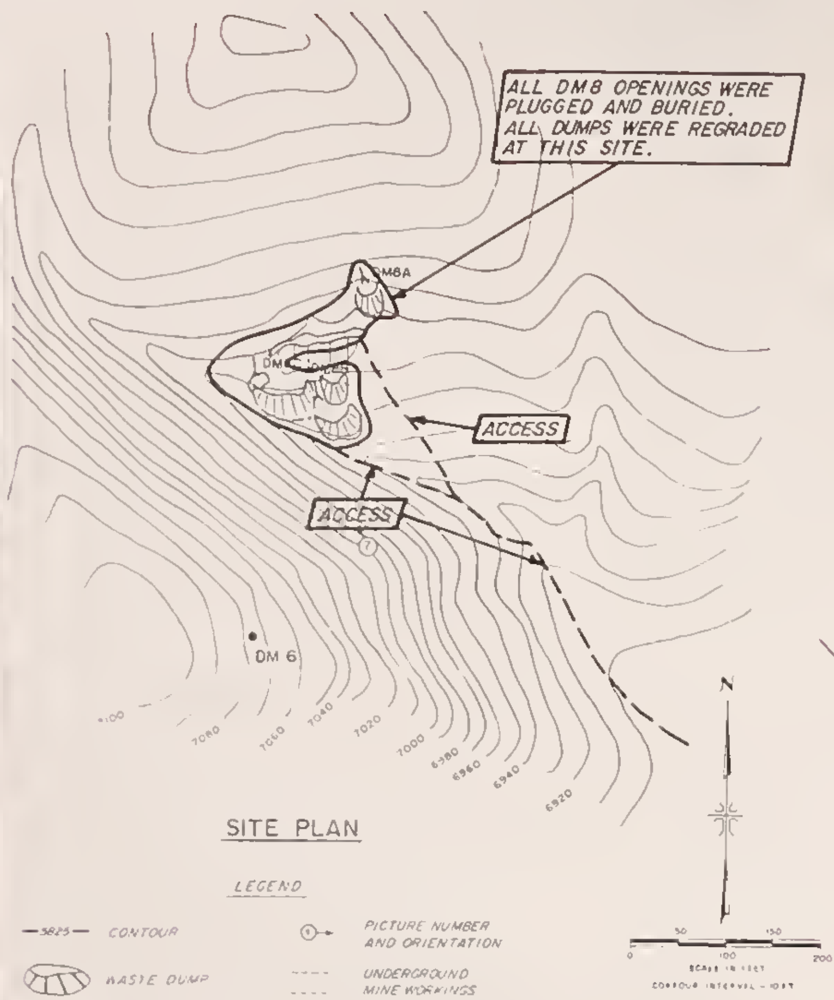
STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY OLO
APPROVED BY DM

REVISIONS NO.	DATE	BY
1	6/20/91	OLO
As-Built	April 1992	OLO

SHEET NO 7 of 29



SITE PLAN

LEGEND

—3825—	CONTOUR	①→	PICTURE NUMBER AND ORIENTATION
	WASTE DUMP	- - - -	UNDERGROUND MINE WORKINGS
— —	DRAINAGE	—<	OPEN ADIT

NOTICE

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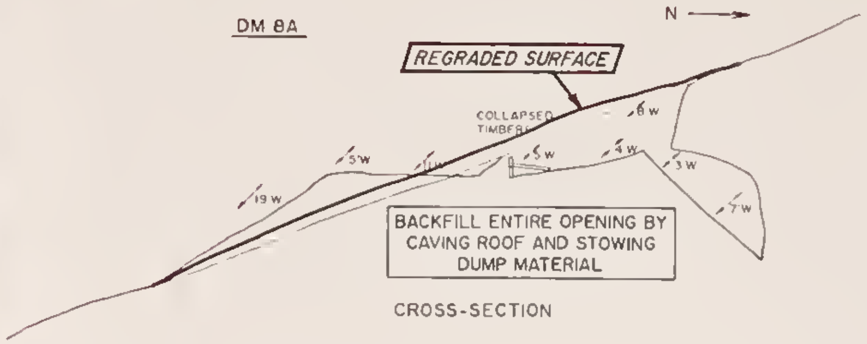
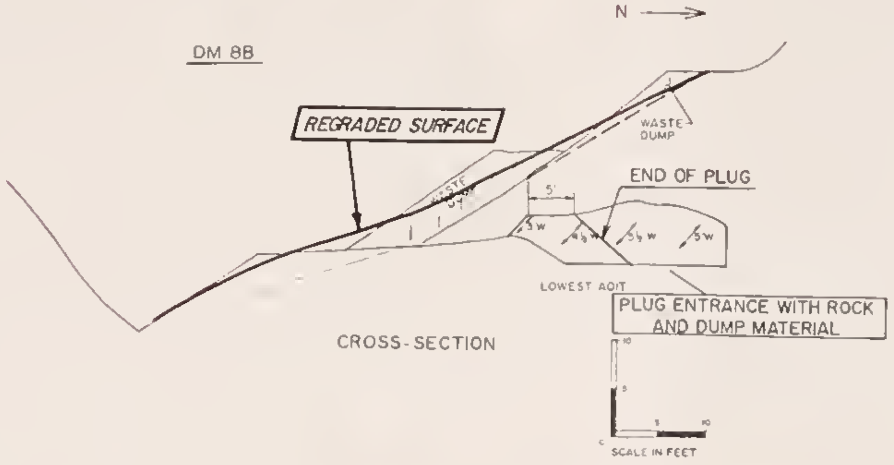
7 PICTURE 7 IS A VIEW OF THE THREE OPENINGS AT DM 8 LOOKING NORTH FROM BELOW DM 6

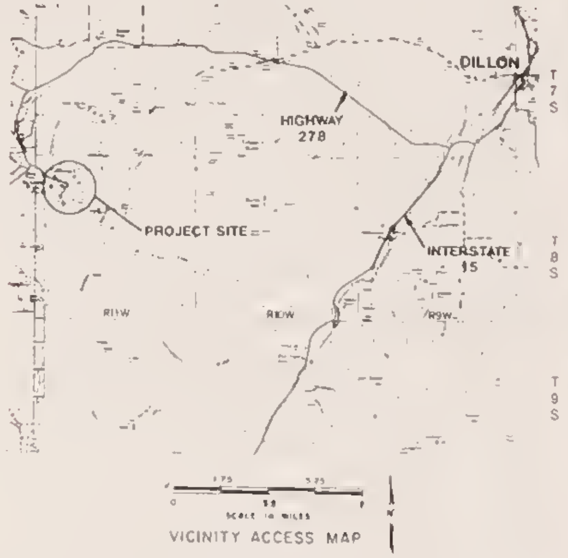

DM 8A
N →
REGRADED SURFACE
COLLAPSED TIMBERS
6W
5W
5W
4W
3W
7W
19 W
BACKFILL ENTIRE OPENING BY CAVING ROOF AND STOWING DUMP MATERIAL

CROSS-SECTION

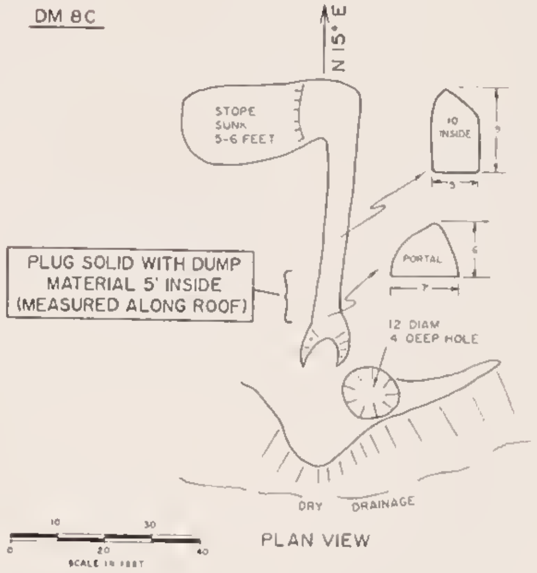
STATE LOCATION MAP



CROSS-SECTION



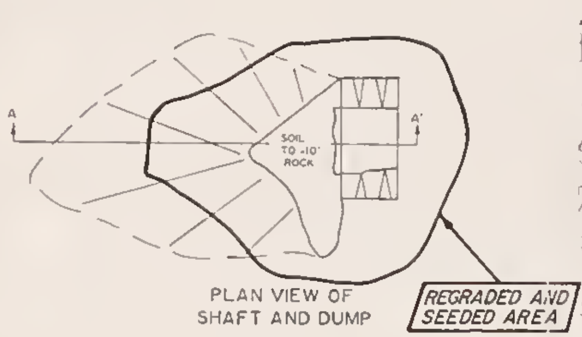
VICINITY ACCESS MAP



PLAN VIEW

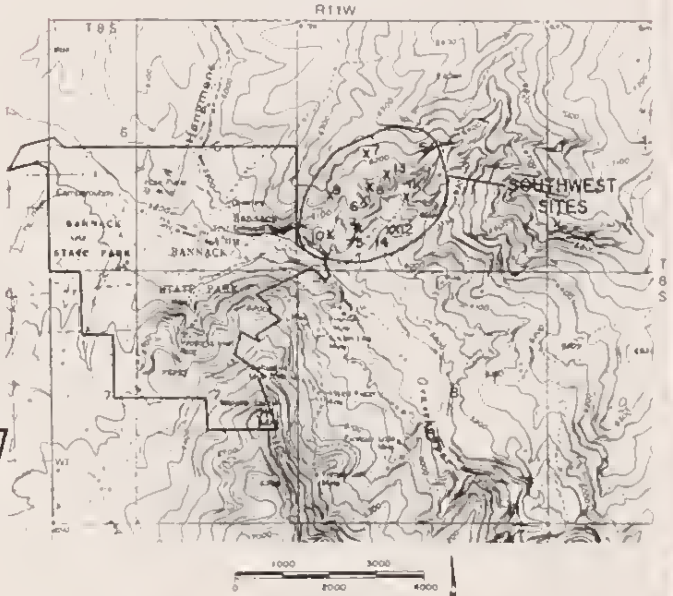
⑧ PICTURE 8 IS LOOKING WEST ACROSS THE DRAINAGE AT DM 9

⑩ PICTURE 10 IS LOOKING SOUTH AT DUMP AND COLLAR OF DM 10.

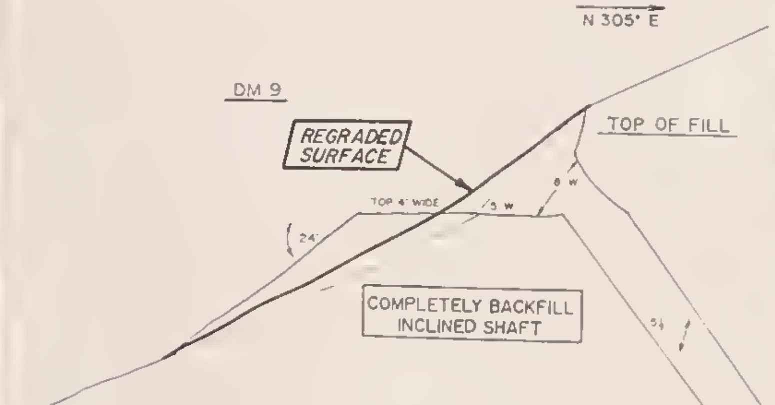


PLAN VIEW OF SHAFT AND DUMP

DM 10



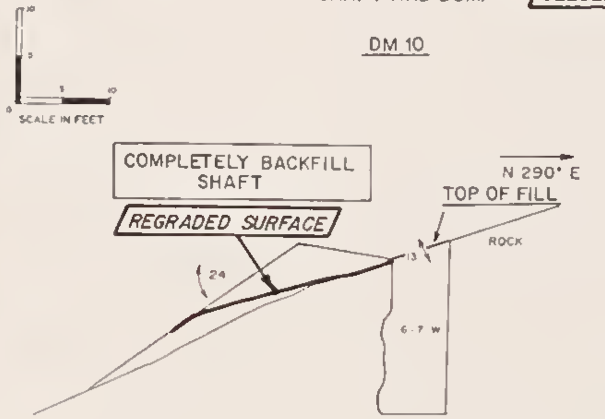
SITE LOCATION MAP



CROSS-SECTION

⑨ PICTURE IS LOOKING INTO THE INCLINED SHAFT AT DM 9

⑪ PICTURE 11 IS LOOKING INTO THE VERTICAL SHAFT AT DM 10



CROSS-SECTION A-A' OF SHAFT AND DUMP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

SOUTHWEST - SECTION 5
(3 of 4)
SECTION 5, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

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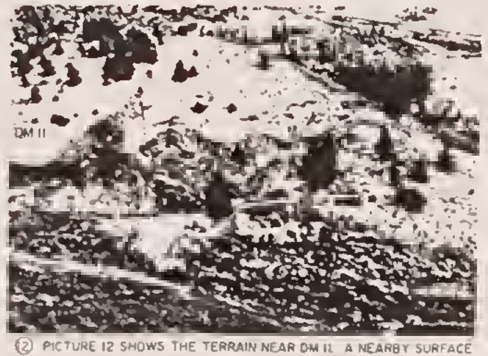
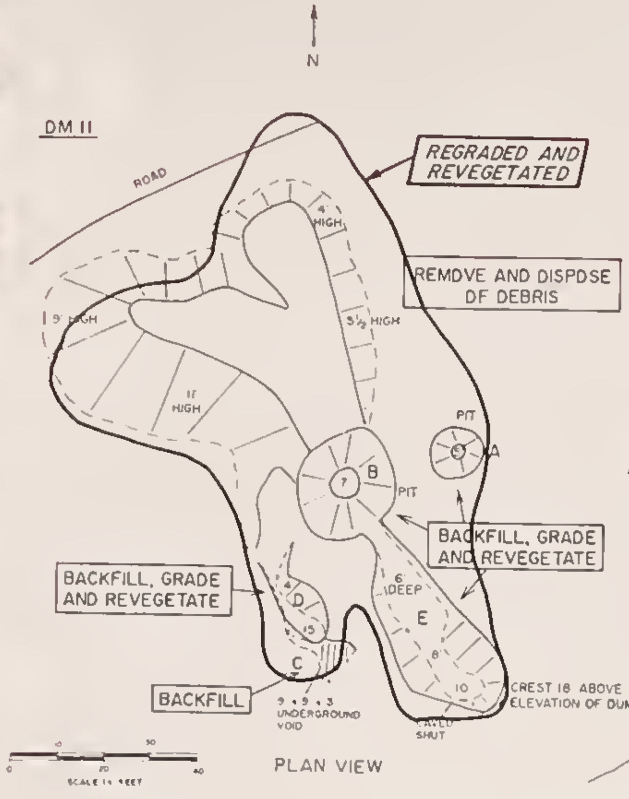
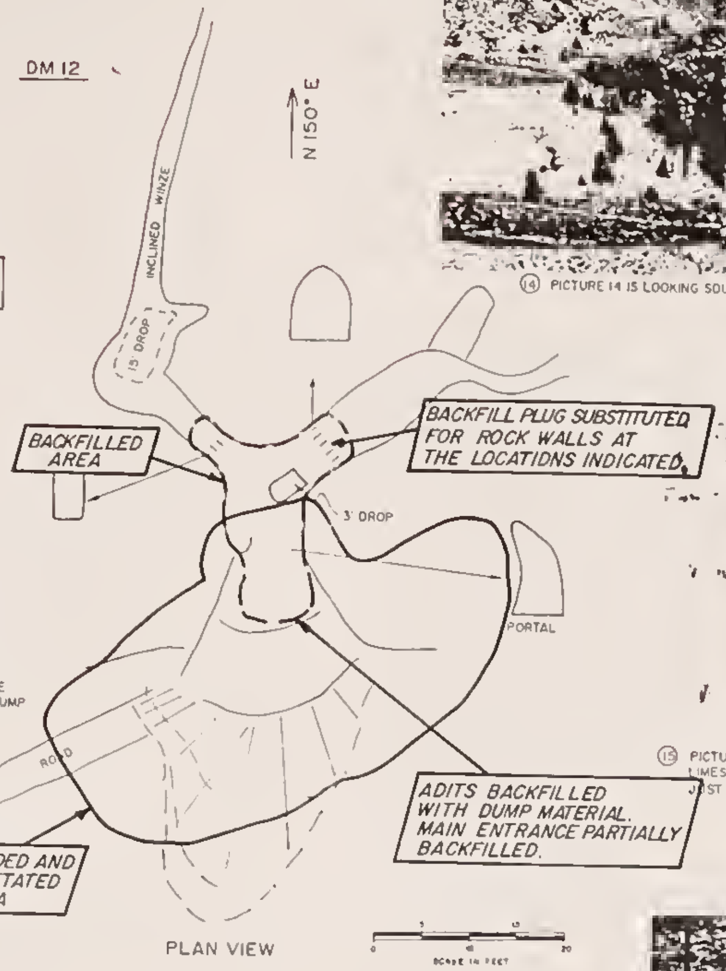
APPROVED BY	DM	
REVISIONS		
NO	DATE	BY
1	6/20/91	DLO
As Built	April 1992	DLO
SHEET NO 8 of 29		



⑫ PICTURE 12 SHOWS THE TERRAIN NEAR DM 11 A NEARBY SURFACE EXCAVATION IS SHOWN IN THE CENTER OF THE PICTURE

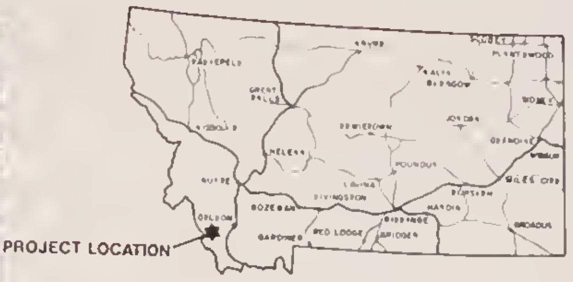
⑬ PICTURE 13 IS A VIEW OF THE ENTRANCE TO THE UNDERGROUND VOID AT DM 11


N
DM 11
ROAD
REGRADED AND REVEGETATED
REMOVE AND DISPOSE OF DEBRIS
4' HIGH
9' HIGH
3½' HIGH
11' HIGH
PIT
A
B
PIT
BACKFILL, GRADE AND REVEGETATE
BACKFILL, GRADE AND REVEGETATE
D
6' DEEP
E
15
C
8'
10
BACKFILL
9 × 9 × 3 UNDERGROUND VOID
CAVED SHUT
CREST 18 ABOVE ELEVATION OF DUMP
0 10 20 30 40
SCALE IN FEET
PLAN VIEW

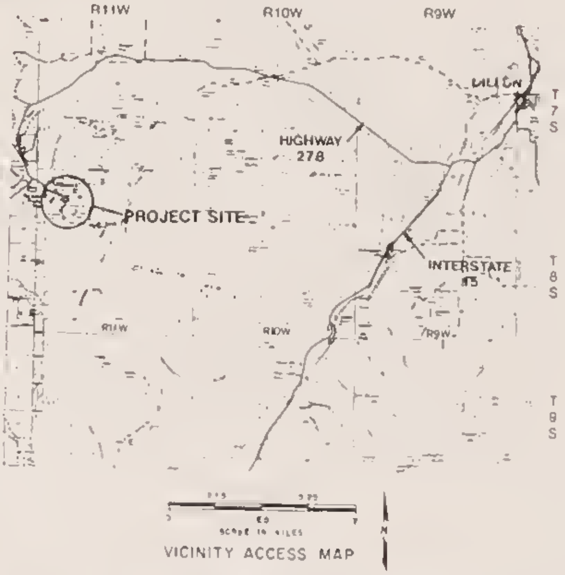

DM 12
N 150° E
INCLINED WINZE
15' DROP
BACKFILLED AREA
BACKFILL PLUG SUBSTITUTED FOR ROCK WALLS AT THE LOCATIONS INDICATED.
3' DROP
PORTAL
ROAD
REGRADED AND REVEGETATED AREA
ADITS BACKFILLED WITH DUMP MATERIAL. MAIN ENTRANCE PARTIALLY BACKFILLED.
0 5 10 15 20
SCALE IN FEET
PLAN VIEW

⑭ PICTURE 14 IS LOOKING SOUTH FROM THE TOP OF A RIDGE AT DM 12 AND DM 14

⑮ PICTURE 15 SHOWS THE DM 12 PORTAL CUT IN MASSIVE LIMESTONE. THE ADIT DIVIDES INTO TWO BRANCHES JUST INSIDE THE PORTAL

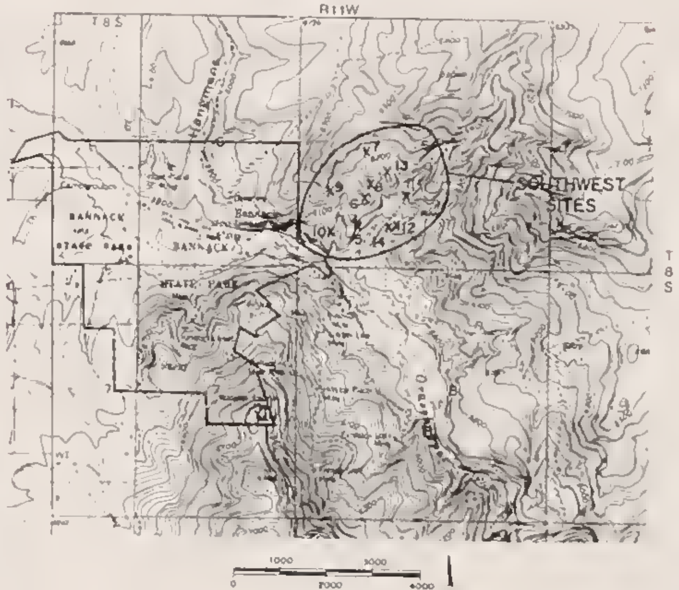


STATE LOCATION MAP



VICINITY ACCESS MAP

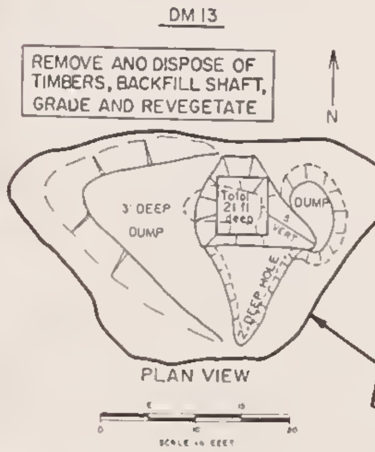
⑱ PICTURE 18 IS A VIEW OF VEGETATION AND CAVING AROUND THE DM 14 ADIT

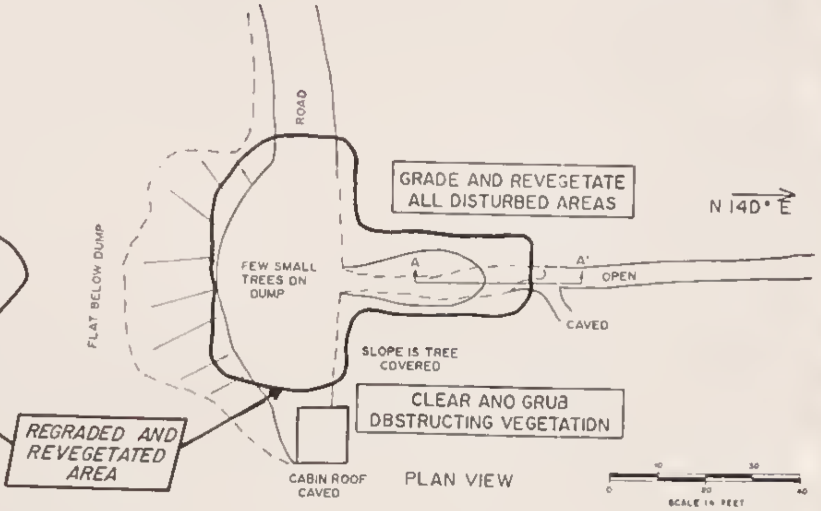


SITE LOCATION MAP

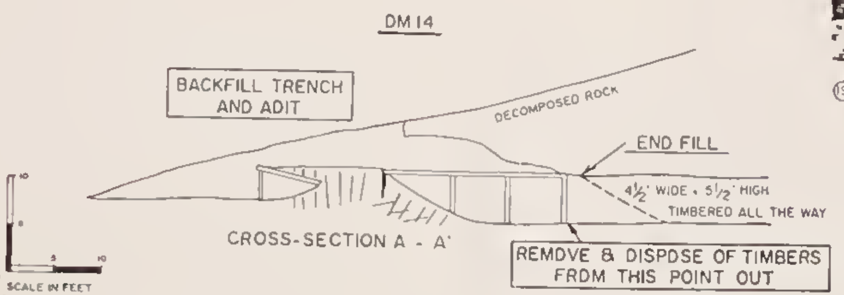
⑯ PICTURE 16 IS A VIEW OF DM 13 LOOKING NORTHWEST METAL STOVE PIPE IS IN THE LEFT FOREGROUND.

⑰ PICTURE 17 IS LOOKING AT LOOSE TIMBERS INSIDE THE DM 13 SHAFT





⑲ PICTURE 19 IS A VIEW OF DM 14 FROM THE ROAD BELOW THE DUMP



CROSS-SECTION A - A'

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

SOUTHWEST - SECTION 5
(4 of 4)
SECTION 5, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

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ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

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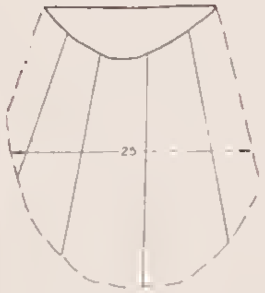
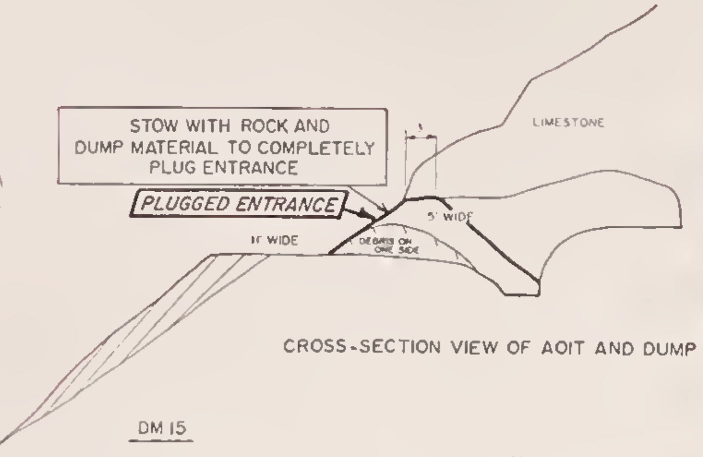
As-Built	April 1992	DLO
SHEET NO 9 of 29		

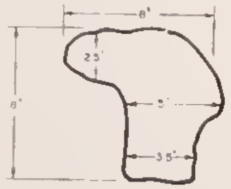


DUMP PLAN VIEW

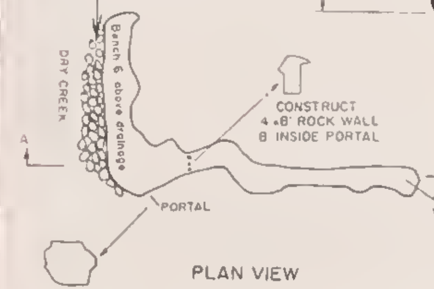

STOW WITH ROCK AND DUMP MATERIAL TO COMPLETELY PLUG ENTRANCE
PLUGGED ENTRANCE
LIMESTONE
5' WIDE
11' WIDE
DEBRIS ON ONE SIDE

CROSS-SECTION VIEW OF AOIT AND DUMP

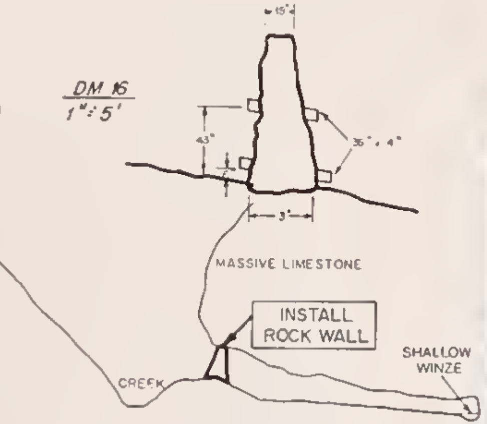
DM 15



DM 16
1":5'

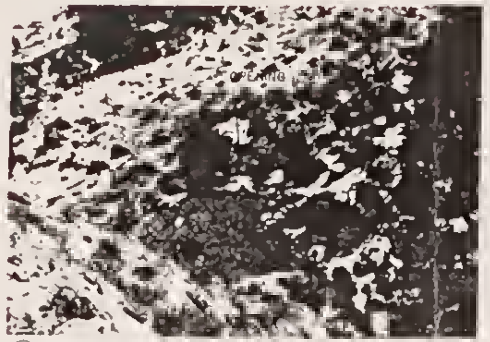

SOURCE OF ROCK
DRY CREEK
Bench & above drainage
CONSTRUCT 4×8' ROCK WALL 8 INSIDE PORTAL
A
A
PORTAL
SHALLOW WINZE
ELEVATION OF PORTAL ENTRANCE

PLAN VIEW



CROSS-SECTION A-A'
OF ADIT OPENING

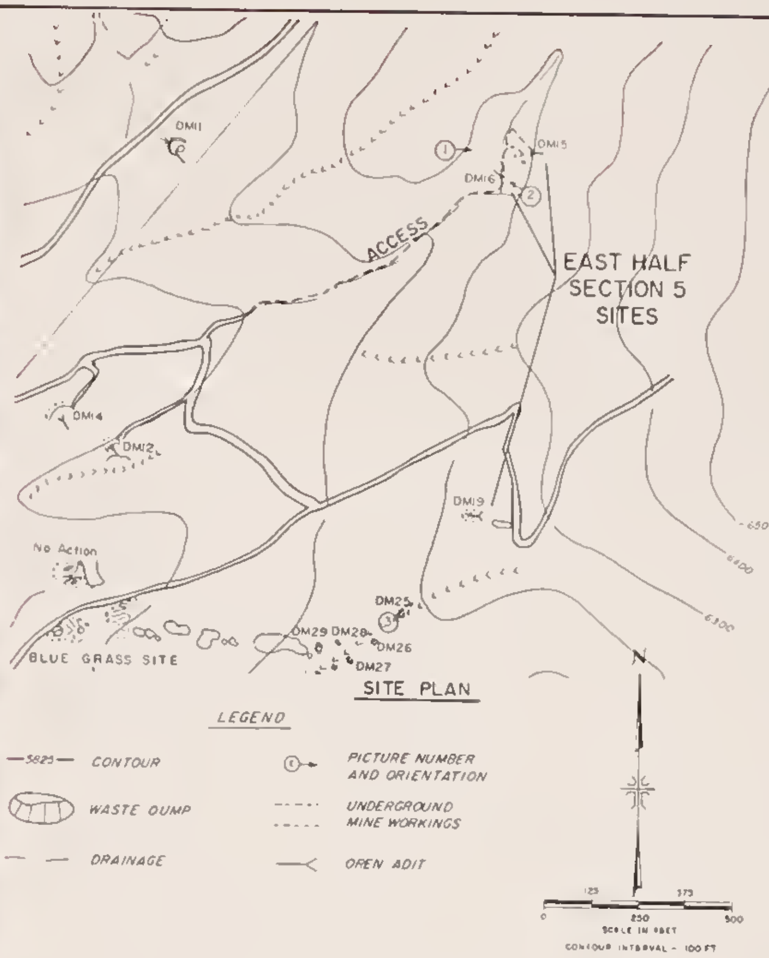
DM 16



① PICTURE 1 LOOKING ACROSS THE ORAINAGE AT THE DM 15 OUMP AND OPENING ON THE STEEP HILLSIDE.

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

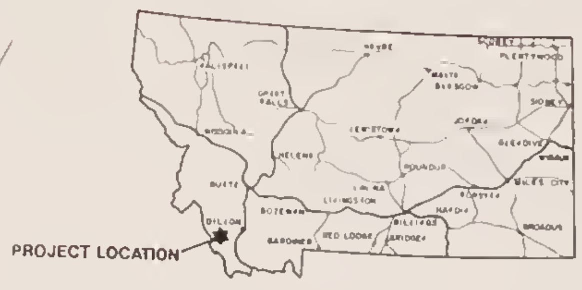
② PICTURE 2 LOOKING AT THE OM 16 PORTAL AND ROCKS PILEO ALONG THE ORAINAGE BOTTOM.



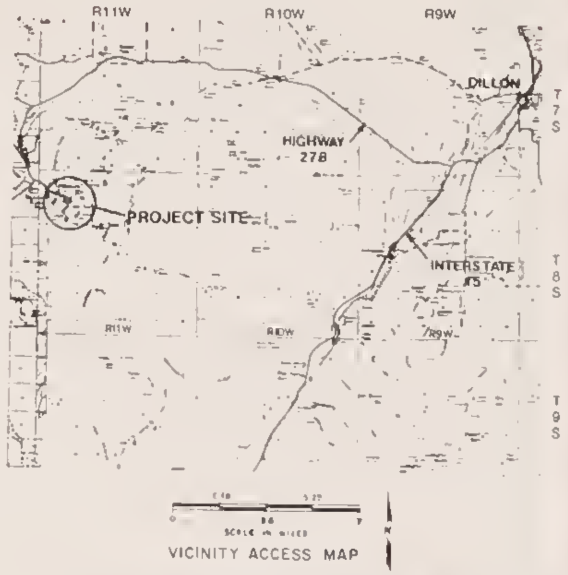
SITE PLAN

LEGEND

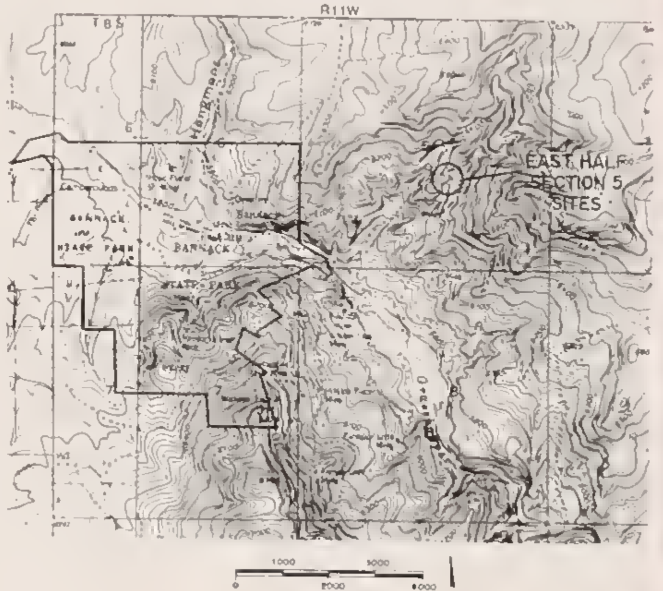
—5825—	CONTOUR	①→	PICTURE NUMBER AND ORIENTATION
	WASTE OUMP	- - - -	UNDERGROUND MINE WORKINGS
— —	DRAINAGE	—<	OREN ADIT



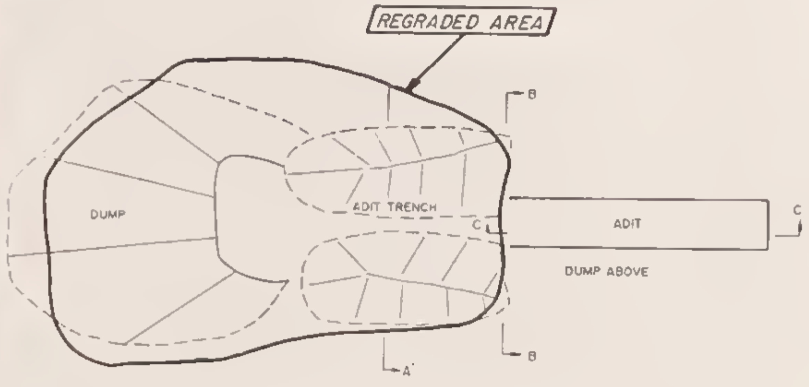
STATE LOCATION MAP



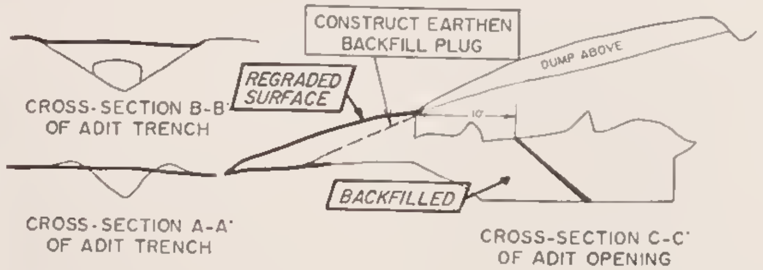
VICINITY ACCESS MAP



SITE LOCATION MAP



PLAN VIEW



CROSS-SECTION B-B'
OF ADIT TRENCH

CROSS-SECTION A-A'
OF ADIT TRENCH

CROSS-SECTION C-C'
OF ADIT OPENING

DM 19

③ PICTURE 3 LOOKING NORTHEAST FROM TOP OF RIDGE AT DM 19 AND THE OUMP AND ROAO OIRECTLY ABOVE THE SITE

WORK OESCRIPTION

- OM 15 - BACKFILL THE ENTRANCE OF THIS ADIT WITH ROCK AND OUMP MATERIAL. THE PLUG WILL BE AT LEAST 3 FEET THICK MEASURED ALONG THE ROOF
- OM 16 - CONSTRUCT A ROCK WALL OUT OF NATIVE STONE AND MORTAR 8 FEET INSIDE THE PORTAL.
- DM 19 - BACKFILL THE ADIT WITH AN EARTHEN PLUG 10 FEET LONG (ALONG THE ROOF). USE OUMP MATERIAL LOCATED ALONG THE SIDE OF THE TRENCH AND IN FRONT OF THE ADIT FOR FILL. THEN BACKFILL AND REGRADE THE ADIT TRENCH.
- REVEGETATE THE DISTURBED AREA AT DM 19. NO REVEGETATION WILL TAKE PLACE AT DM 15 AND DM 16.

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
ADIT DM 15	5'W × 3-10H' × 15'L	BACKFILL W/ DUMP MATERIAL	17 CU YDS
ADIT DM 16	4'W × 8'H × 2-4' THICK	CONSTRUCT ROCK WALL	1 WALL
ADIT DM 19	5'W × 3-6'H × 10'L	BACKFILL ADIT USING DUMP BACKFILL/REGRADE TRENCH	14 CU YDS 7 CU YDS
WATER	ROADS	FOR OUST SUPPRESSION	0 KGAL
REVEGETATION OF 0.03 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	4.6 POUNOS 1.3 LBS PLS 150 POUNDS

ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE. THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

NOTICE

AN ABANDONED MINE UNDERLIES THIS SITE. MANY POTENTIAL HAZAROS EXIST. THE EXTENT OF THESE HAZAROS IS NOT FULLY KNOWN. CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

EAST HALF SECTION 5

SECTION 5, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY: DM

REVISIONS NO.	DATE	BY
1	6/20/91	OLO
As-Built	April 1992	OLO

SHEET NO 10 of 29

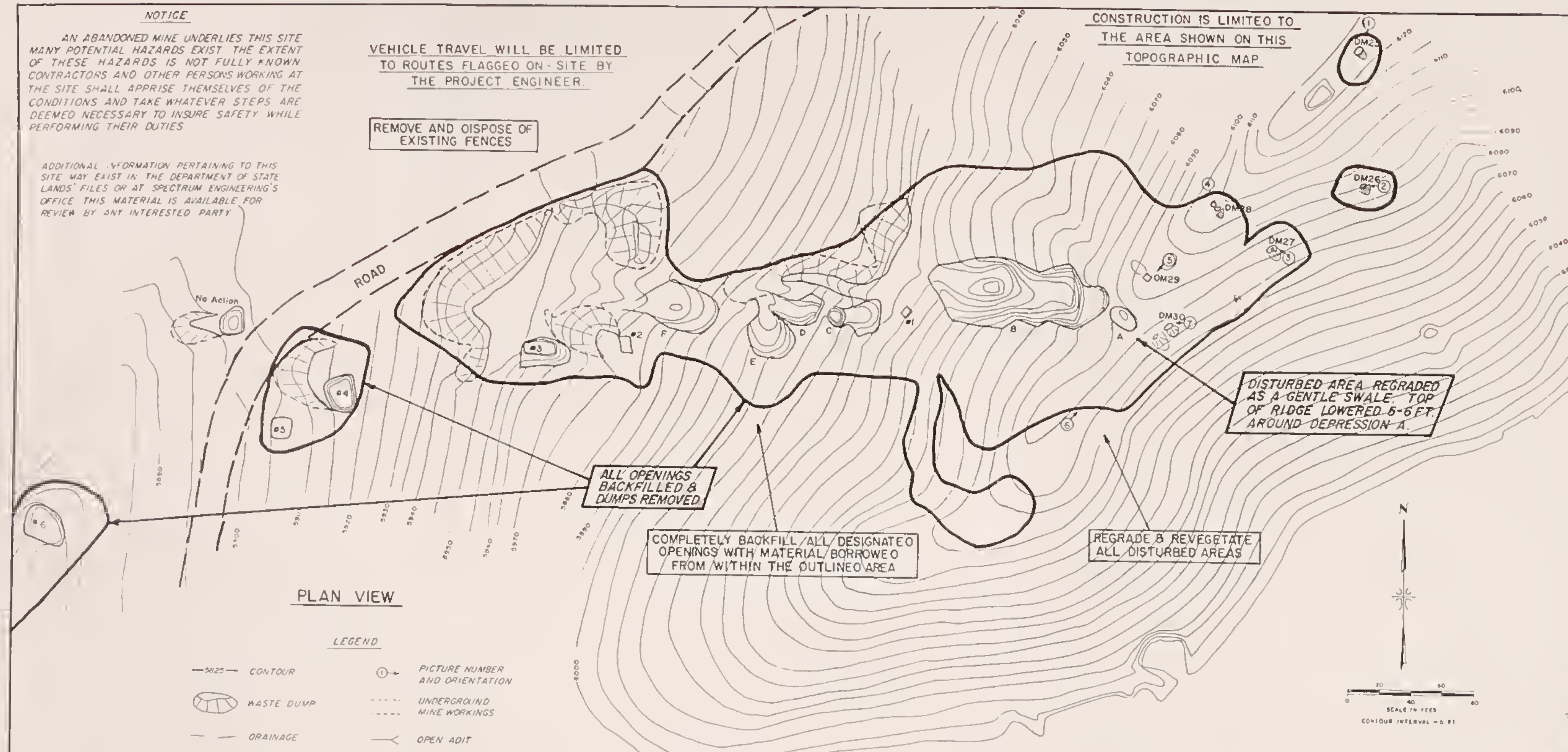
NOTICE

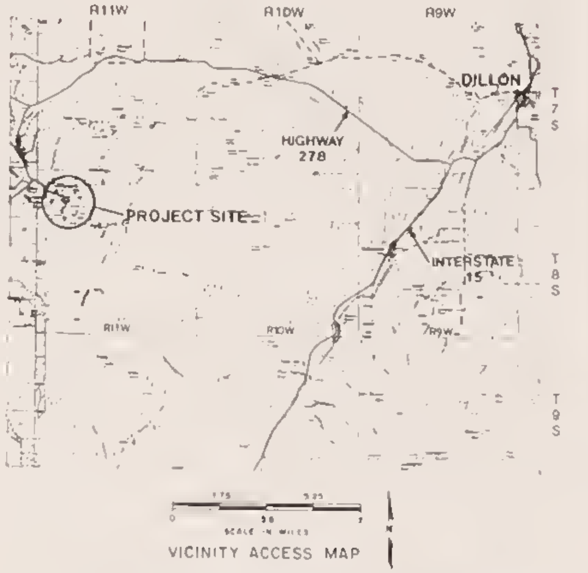
AN ABANDONED MINE UNDERLIES THIS SITE MANY POTENTIAL HAZARDS EXIST THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES

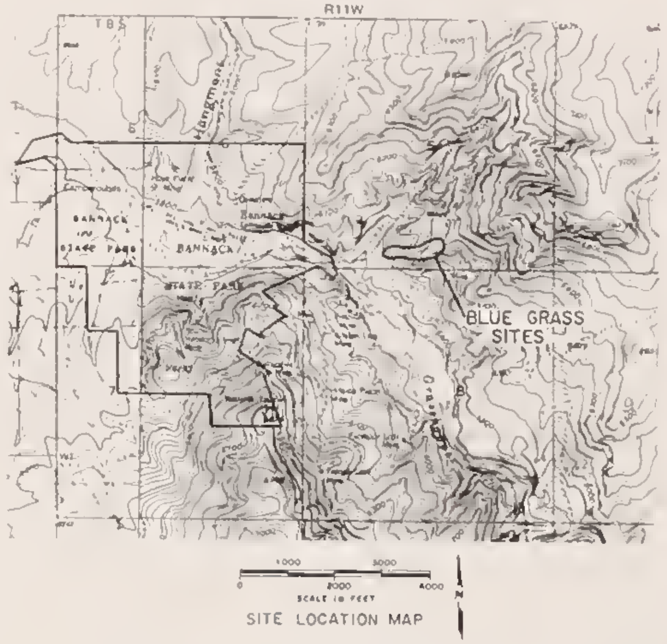
ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

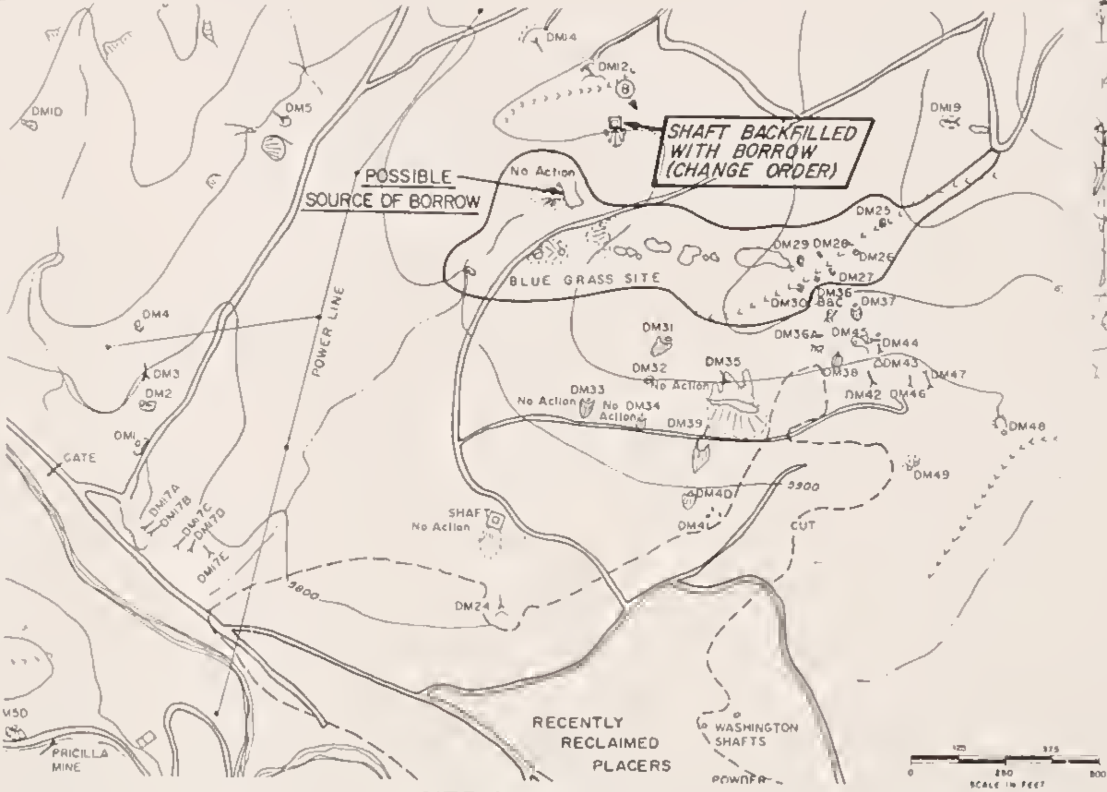
VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

CONSTRUCTION IS LIMITED TO THE AREA SHOWN ON THIS TOPOGRAPHIC MAP


REMOVE AND DISPOSE OF EXISTING FENCES
ROAD
No Action
DM25
DM26
DM27
DM28
DM29
DM30
A
B
C
D
E
F
ALL OPENINGS BACKFILLED & DUMPS REMOVED
COMPLETELY BACKFILL ALL DESIGNATED OPENINGS WITH MATERIAL BORROWED FROM WITHIN THE OUTLINED AREA
REGRADE & REVEGETATE ALL DISTURBED AREAS
DISTURBED AREA REGRADED AS A GENTLE SWALE. TOP OF RIDGE LOWERED 5-6 FT. AROUND DEPRESSION A.
N
SCALE IN FEET
CONTOUR INTERVAL = 5 FT
PLAN VIEW
LEGEND
CONTOUR
WASTE DUMP
DRAINAGE
PICTURE NUMBER AND ORIENTATION
UNDERGROUND MINE WORKINGS
OPEN ADIT







WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
OPENING DM 25	6-10' × 7-10' × 8'D	BACKFILL WITH MATERIAL	19 CU YDS
OPENING DM 26	6-11 × 3-15' × 13'D	BACKFILL WITH MATERIAL	18 CU. YDS
OPENING DM 27	6'-10' × 6-10' × 11'D	BACKFILL WITH MATERIAL	16 CU YDS
OPENING DM 28	6' × 7 & 5' × 6	BACKFILL WITH MATERIAL	20 CU YDS
OPENING DM 29	7' × 8' × 19'D	BACKFILL WITH MATERIAL	49 CU. YDS
OPENING DM 30	8' × 14' × 7'D	BACKFILL WITH MATERIAL	21 CU YDS
SHAFT 1	4' × 5' × 55'D	BACKFILL WITH MATERIAL	41 CU YDS
SHAFT 2	6' × 7.5' × 58'D	BACKFILL WITH MATERIAL	97 CU. YDS
SHAFT 3	6 × 10' × 38'D	BACKFILL WITH MATERIAL	85 CU. YDS
SHAFT 4	8'-18' × 8'-22' × 61'D	BACKFILL WITH MATERIAL	300 CU YDS
SHAFT 5	6-13' × 6.5'-14' × 22'D	BACKFILL WITH MATERIAL	48 CU. YDS
SHAFT 6	9-21' × 10-23' × 75'D	BACKFILL WITH MATERIAL	370 CU. YDS
DEPRESSION A	9' × 18' × 5'D	BACKFILL WITH MATERIAL	30 CU. YDS
DEPRESSION B	20'-40 × 100' × 10'-40'D	BACKFILL WITH MATERIAL	1620 CU YDS
DEPRESSION C	10' × 20' × 23'D	BACKFILL WITH MATERIAL	175 CU. YDS
DEPRESSION D	15' × 30' × 8'D	BACKFILL WITH MATERIAL	135 CU YDS
DEPRESSION E	25 × 30' × 5'D	BACKFILL WITH MATERIAL	130 CU. YDS
DEPRESSION F	25' × 35 × 8'D	BACKFILL WITH MATERIAL	250 CU. YDS
TOTAL VOLUME	ALL OPENINGS		3424 CU YDS
DEBRIS REMOVAL	ALL SITES	REMOVE AND DISPOSE	5 PICKUP LOADS
WATER	BACKFILL AND ROADS	FOR COMPACTION AND DUST SUPPRESSION	0 KGAL
REVEGETATION 2.08 ACRES ACTUAL	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

WORK DESCRIPTION

- ESTABLISH ACCESS PER EQUIPMENT REQUIREMENTS
- REMOVE ALL DEBRIS AND VEGETATION AND TO THE EXTENT POSSIBLE REMOVE THE TIMBERS FROM ALL OPENINGS PRIOR TO BACKFILLING REMOVE AND DISPOSE OF EXISTING FENCES
- OPENINGS DM 25 THROUGH DM 30 - BACKFILL EACH OPENING
- SHAFTS 1 THROUGH 6 - BACKFILL EACH SHAFT
- DEPRESSIONS A THROUGH F - BACKFILL ALL DEPRESSIONS
- ALL AVAILABLE DUMP MATERIAL WILL BE USED IN THE BACKFILLING OPERATION MATERIAL WILL ALSO NEED TO BE BORROWED BY RECONTOURING THE TOP OF THE RIDGE AND THE ADJACENT SLOPES THE FINISHED SURFACE SHALL PERMIT POSITIVE DRAINAGE AND NO FINISHED SLOPES SHALL BE GREATER THAN 2H:1V
- REVEGETATE ALL DISTURBED AREAS (BACKFILLED AND BORROW AREAS).

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

BLUE GRASS
(1 of 2)
SECTION 5, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

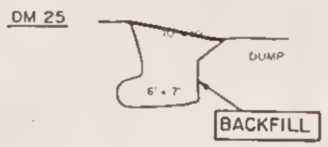
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY DLO
APPROVED BY CM

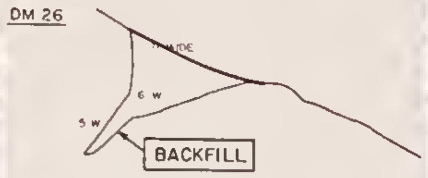
REVISIONS		
NO	DATE	BY
1	6/20/91	DLO
As Built	April 1992	DLO

SHEET NO 11 of 29

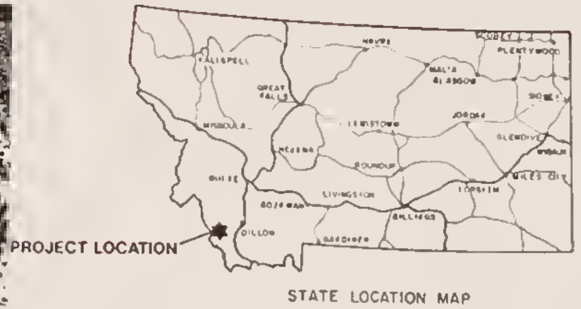
① PICTURE 1 IS LOOKING SW AT DM 25



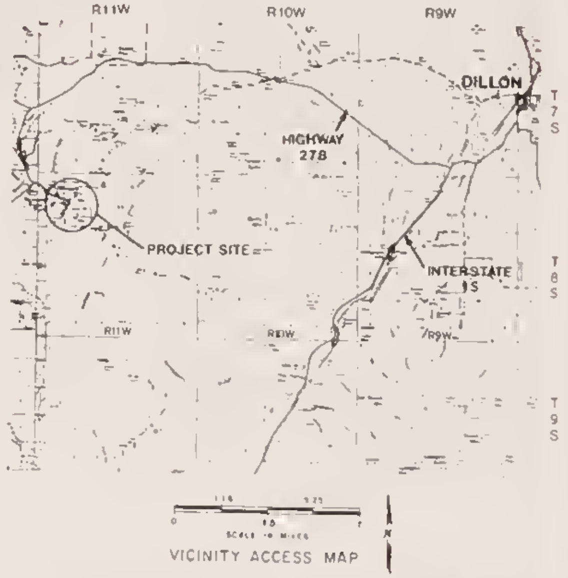
② PICTURE 2 IS LOOKING INTO DM 26



⑥ PICTURE 6 IS LOOKING NE UP THE RIDGELINE SHOWING OPENINGS ALONG THE TOP AND SE FACING SLOPE

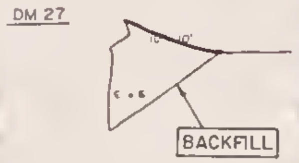


STATE LOCATION MAP

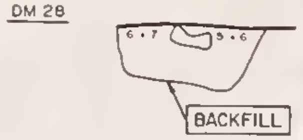


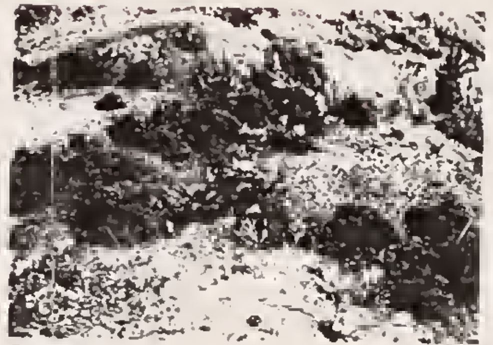
VICINITY ACCESS MAP

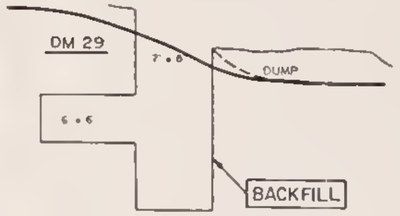
③ PICTURE 3 SHOWS DM 27 FROM THE DUMP



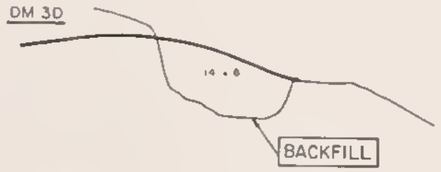
④ PICTURE 4 IS LOOKING THROUGH THE ARCH BETWEEN TWO VERTICAL OPENINGS AT DM 28



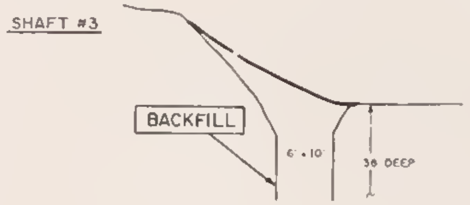

⑤ PICTURE 5 SHOWS DM 29 LOOKING SW FROM A LIMESTONE OUTCROP

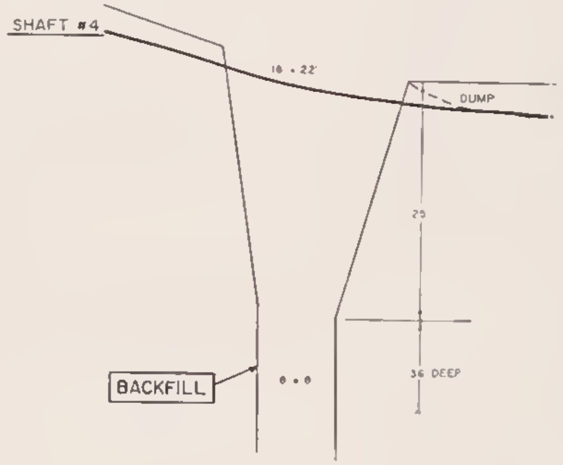


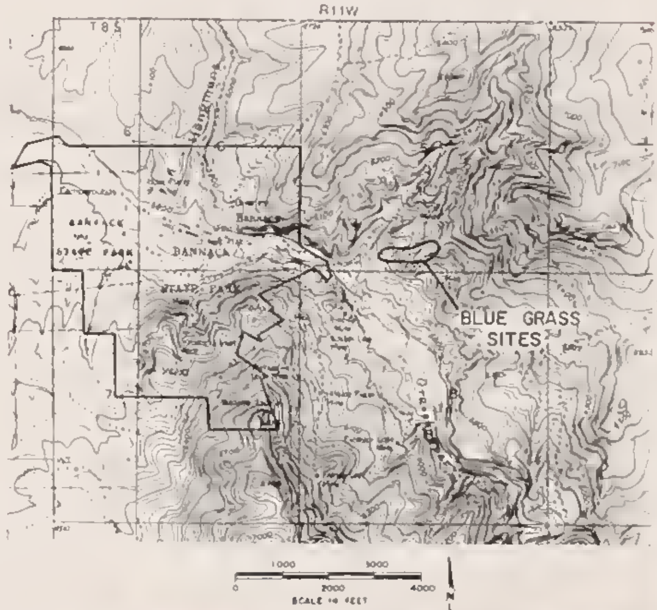
⑦ PICTURE 7 IS A VIEW OF DM 30.



SHAFT #1 5' x 4' x 55' Timbered
SHAFT #2 6' x 7½' x 58'

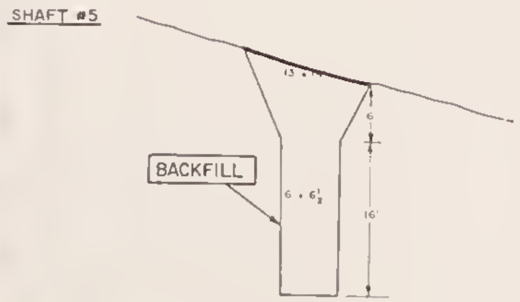


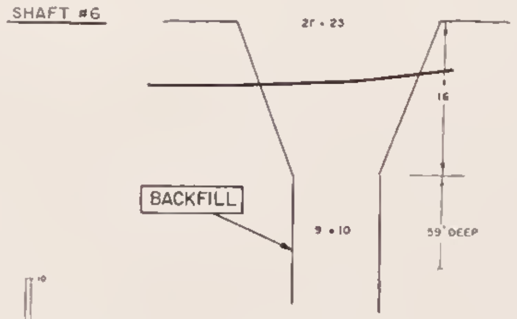




SITE LOCATION MAP

⑧ PICTURE 8 IS LOOKING SE AT MANY OF THE PITS, STOPES AND SHAFTS OF THE NW FACING SLOPES





AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

BLUE GRASS
(2 of 2)
SECTION 5, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

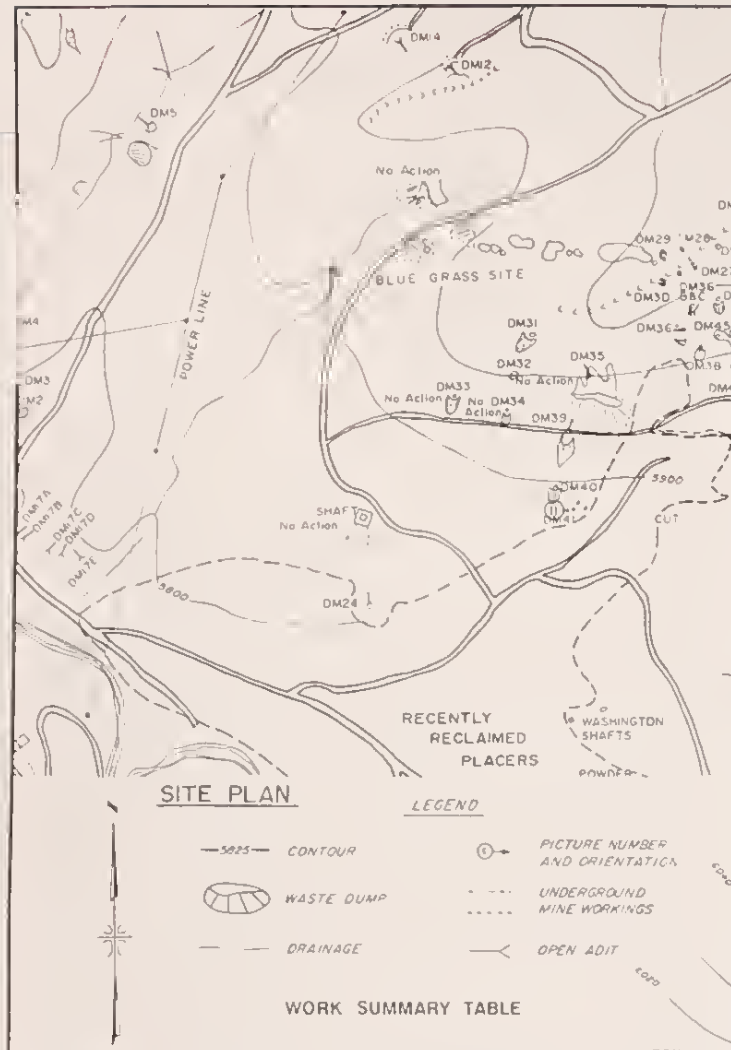
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY DLO
APPROVED BY DM

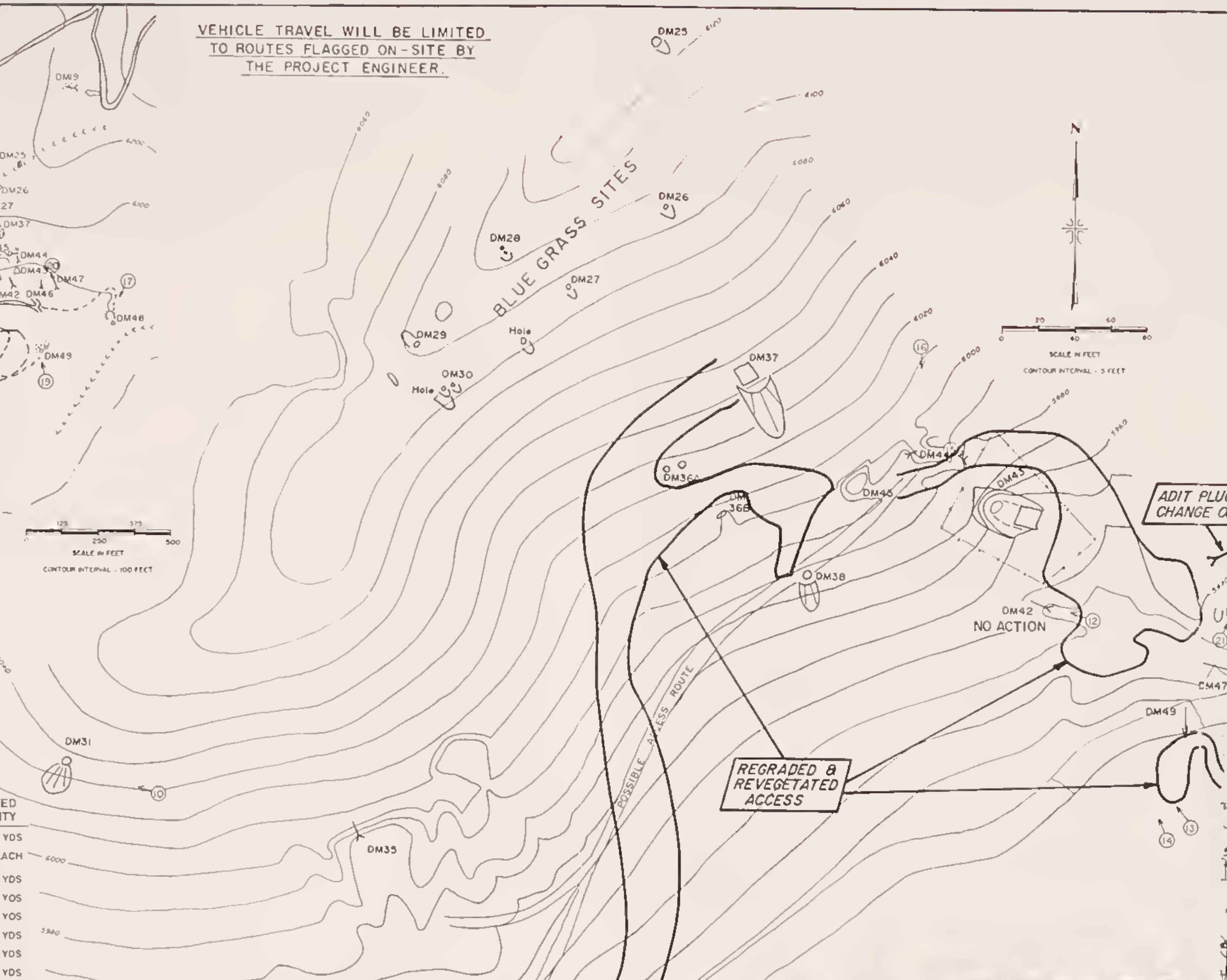
REVISIONS NO	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO

SHEET NO 12 of 29

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.



SITE PLAN



NO ACTION

DM34

DM39

DM40 & 41

PLAN VIEW

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
OPENING DM 31	6' x 8' x 15'D	BACKFILL W/ DUMP MATERIAL	25 CU. YDS
OPENING DM 35	SEE CROSS SECTION	INSTALL 11' x 14' 3/8 INCH THICK SHEET METAL CURTAIN BACKFILL AGAINST BULKHEAD	1 EACH 40 CU YDS
OPENING DM 36A	20' x 5' x 20'D	BACKFILL W/ WASHED GRAVEL	176 CU. YDS
OPENING DM 36B	4'W x 6'H x 10'L	BACKFILL W/ WASHED GRAVEL	27 CU YDS
OPENING DM 37	6' x 7 x 18'D	BACKFILL W/ WASHED GRAVEL	64 CU. YDS
OPENING DM 38	5' x 12' x 20'D	BACKFILL W/ WASHED GRAVEL	87 CU YDS
OPENING DM 39	4'W x 6'H x 6'D AND BACKFILL TRENCH	BACKFILL W/ WASHED GRAVEL	104 CU. YDS
OPENING DM 40	5-25' x 12' x 12'D	BACKFILL W/ WASHED GRAVEL	129 CU. YDS
OPENING DM 41A	6-10' x 10' x 3.5-10'	BACKFILL W/ WASHED GRAVEL	87 CU YDS
OPENING DM 41B	7' x 12' x 9' PLUS UNDERGROUND	BACKFILL W/ WASHED GRAVEL	
OPENING DM 41C	6' x 6' x 6'D	BACKFILL W/ WASHED GRAVEL	
OPENING DM 42	NO ACTION	NO ACTION PER LANDOWNER REQUEST	N/A
OPENING DM 43	6 x 6' x 40'D (SHAFT 1) 10' x 10' x 40'D (SHAFT 2) HIGHWALL ELIMINATION	REMOVE FENCE & BACKFILL WITH WASHED GRAVEL BACKFILL CUT WITH WASHED GRAVEL	100 CU. YDS 250 CU. YDS
OPENING DM 44	18' x 16' x 16'	BACKFILL CAVITY WITH WASHED GRAVEL	307 CU YDS
OPENING DM 45	SEE CROSS SECTION	BACKFILL CAVITY WITH WASHED GRAVEL	175 CU. YDS
OPENING DM 46	5'W x 5.5'H x 20'L	BACKFILL WITH MATERIAL	36 CU. YDS
OPENING DM 47	NO ACTION	NO ACTION PER LANDOWNER REQUEST	N/A
OPENING DM 48	6' x 6 x 41'D	REMOVE FENCE & BACKFILL WITH WASHED GRAVEL	90 CU YDS
OPENING DM 49	5-15' x 10-15 x 45'D	REMOVE FENCE & BACKFILL WITH WASHED GRAVEL	52 CU. YDS
TOTAL	ALL 19 OPENINGS		1759 CU. YDS
DEBRIS REMOVAL	ALL SITES	REMOVE AND DISPOSE	10 PICKUP LOADS
WATER	BACKFILL AND ROADS	FOR COMPACTION AND DUST SUPPRESSION	8 KGAL
REVEGETATION OF 0.94 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

WORK DESCRIPTION

- ESTABLISH ACCESS PER EQUIPMENT REQUIREMENTS.
- REMOVE ALL DEBRIS AND VEGETATION AND TO THE EXTENT POSSIBLE REMOVE THE TIMBERS FROM ALL OPENINGS PRIOR TO BACKFILLING. REMOVE AND DISPOSE OF EXISTING FENCES AT DM 43, DM 48 AND DM 49 PRIOR TO BACKFILLING.
- BACKFILL OPENING DM 31 WITH ADJACENT DUMP MATERIAL.
- BACKFILL OPENINGS DM 36A, 36B, 37, 38, 39, 40, 41A, 41B, 41C, 43, 44, 45, 46, 48 AND DM 49 (15 OPENINGS) WITH WASHED GRAVEL (CONTRACTOR PROVIDE WASHED GRAVEL).
- NO ACTION ON OPENINGS DM 42 AND DM 47 PER LANDOWNER REQUEST.
- INSTALL AN 11 FOOT BY 14 FOOT 3/8 INCH THICK SHEET PILING CURTAIN ACROSS THE ENTRANCE AND BACKFILL OVER THE BULKHEAD AT OPENING DM 35.
- REVEGETATE OPENING DM 31 AND ACCESS ROADS. NO REVEGETATION ON THOSE OPENINGS BACKFILLED WITH WASHED GRAVEL.

① PICTURE 1 IS LOOKING NORTH ACROSS GRASSHOPPER CREEK TO THE GOLD BUG SITE AND SHOWING DEVELOPED ACCESS.

ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE. THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY.

NOTICE

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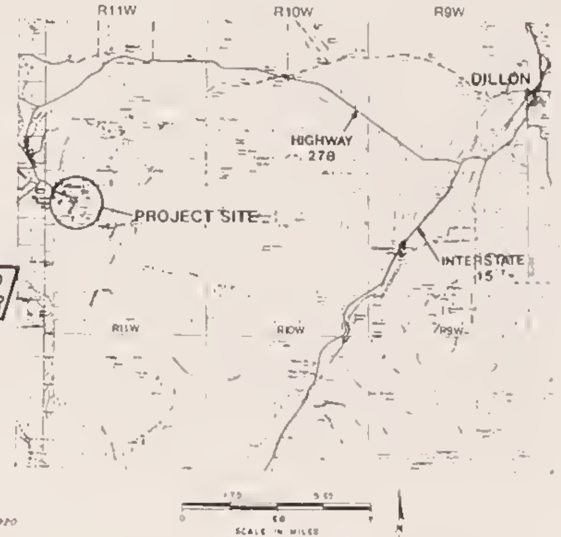
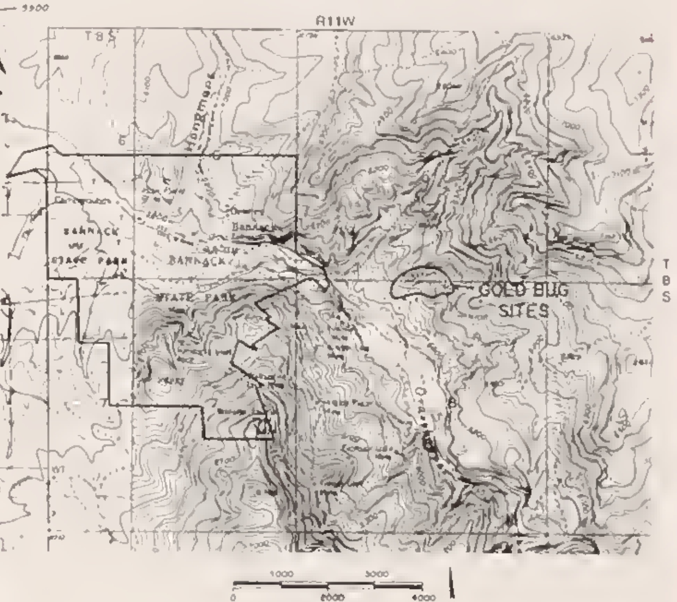
STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

GOLD BUG
(1 of 4)
SECTIONS 5 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

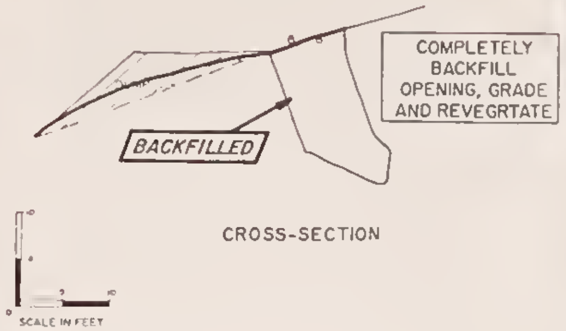
DATE March 1991
DRAWN BY LNR
APPROVED BY CM

REVISIONS NO.	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO

SHEET NO 13 of 29

⑩ PICTURE 10 IS LOOKING WEST TOWARD THE NOSE OF THE RIDGE AND OM 31

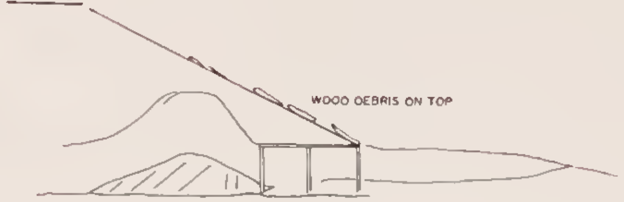
DM 31



CROSS-SECTION

⑫ PICTURE 12 SHOWS THE ENTRANCE TO DM 42 WITH A WOODEN CHUTE RUNNING UP THE SLOPE ON THE SURFACE. DO NOT OISTURB

DM 42

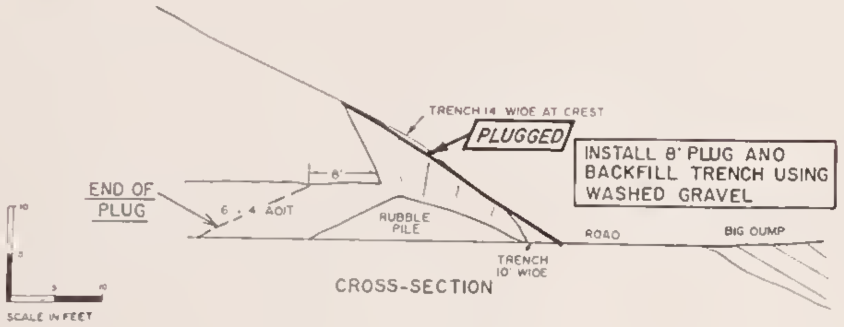


CROSS-SECTION OF OPENING

NO ACTION PER LANDOWNER

STATE LOCATION MAP

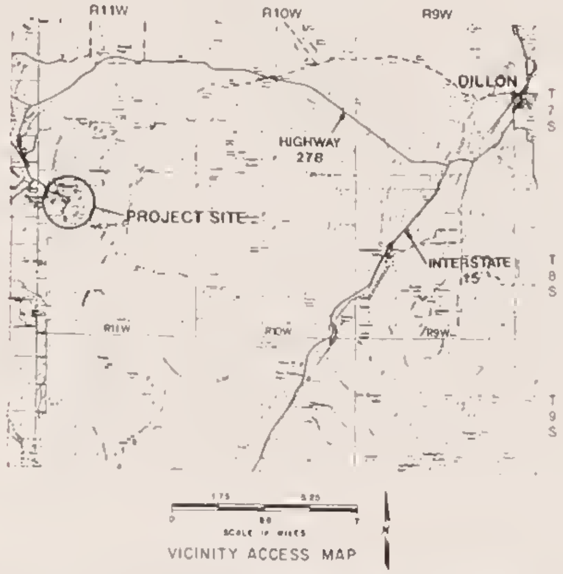
OM 39



CROSS-SECTION

⑬ PICTURE 13 IS LOOKING NORTHWEST ACROSS THE ORAINAGE AT DM 42 AND OM 43.

⑭ PICTURE 14 IS A VIEW OF OM 43 INSIDE THE FENCED ENCLOSURE AND DM 44 AND OM 45 UPHILL.

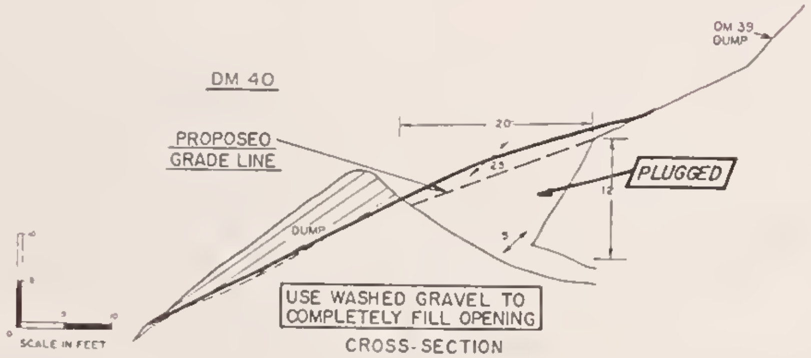


VICINITY ACCESS MAP

DM 40

PLAN VIEW

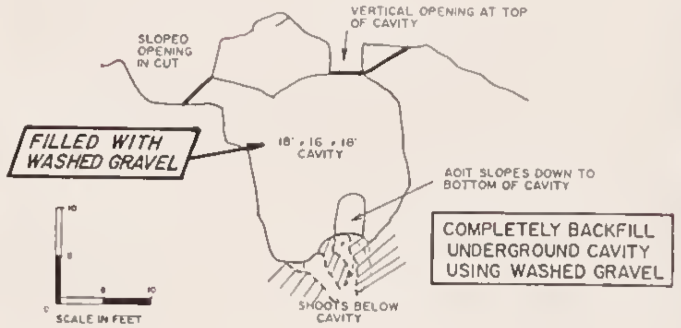
DM 40

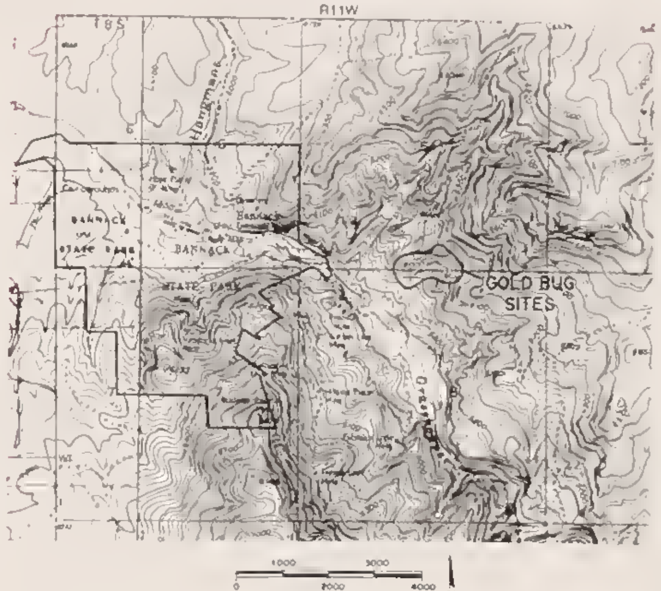


CROSS-SECTION

⑮ PICTURE 15 SHOWS THE INSIDE OF DM 44 LOOKING OUT TOWARD THE AOIT.

DM 44

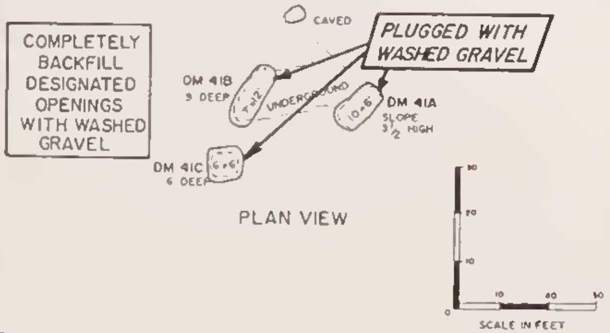

VERTICAL OPENING AT TOP OF CAVITY
SLOPEO OPENING IN CUT
FILLED WITH WASHED GRAVEL
18' x 16 x 18' CAVITY
AOIT SLOPES DOWN TO BOTTOM OF CAVITY
COMPLETELY BACKFILL UNDERGROUND CAVITY USING WASHED GRAVEL
SHOOTS BELOW CAVITY
SCALE IN FEET



SITE LOCATION MAP

⑪ PICTURE 11 IS A VIEW OF ONE OF THE OPENINGS AT DM 41. A RECENT MINING CUT IS IN THE BACKGROUNO

DM 41


COMPLETELY BACKFILL DESIGNATED OPENINGS WITH WASHED GRAVEL
CAVED
PLUGGED WITH WASHED GRAVEL
DM 41B 9 DEEP
UNDERGROUND
DM 41A SLOPE 3½ HIGH
DM 41C 6 DEEP
SCALE IN FEET

PLAN VIEW

⑯ PICTURE 16 IS A VIEW OF THE TERRAIN OVER THE CAVITY AT DM 44

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

GOLD BUG
(3 of 4)
SECTIONS 5 & 8, T 8 S, R 11 W
BEAVERHEAO COUNTY, MONTANA

STATE OF MONTANA
OEPARTMENT OF STATE LANOS
ABANOONEO MINE RECLAMATION BUREAU, RECLAMATION OIVISION

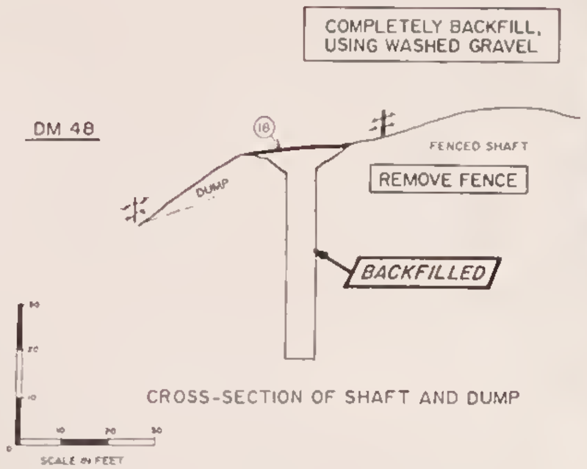
SPECTRUM ENGINEERING
Mining ond Civil Engineers
5302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY: CM

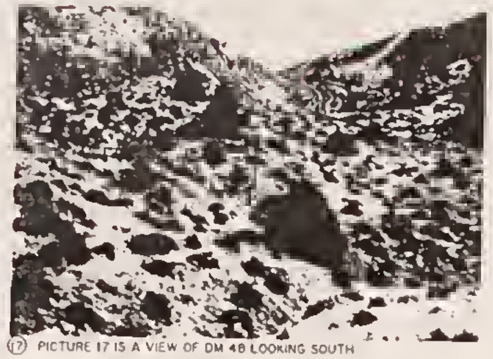
REVISIONS NO	DATE	BY
1	6/20/91	OLO
As-Built	April 1992	OLO

SHEET NO 15 of 29

DM 48



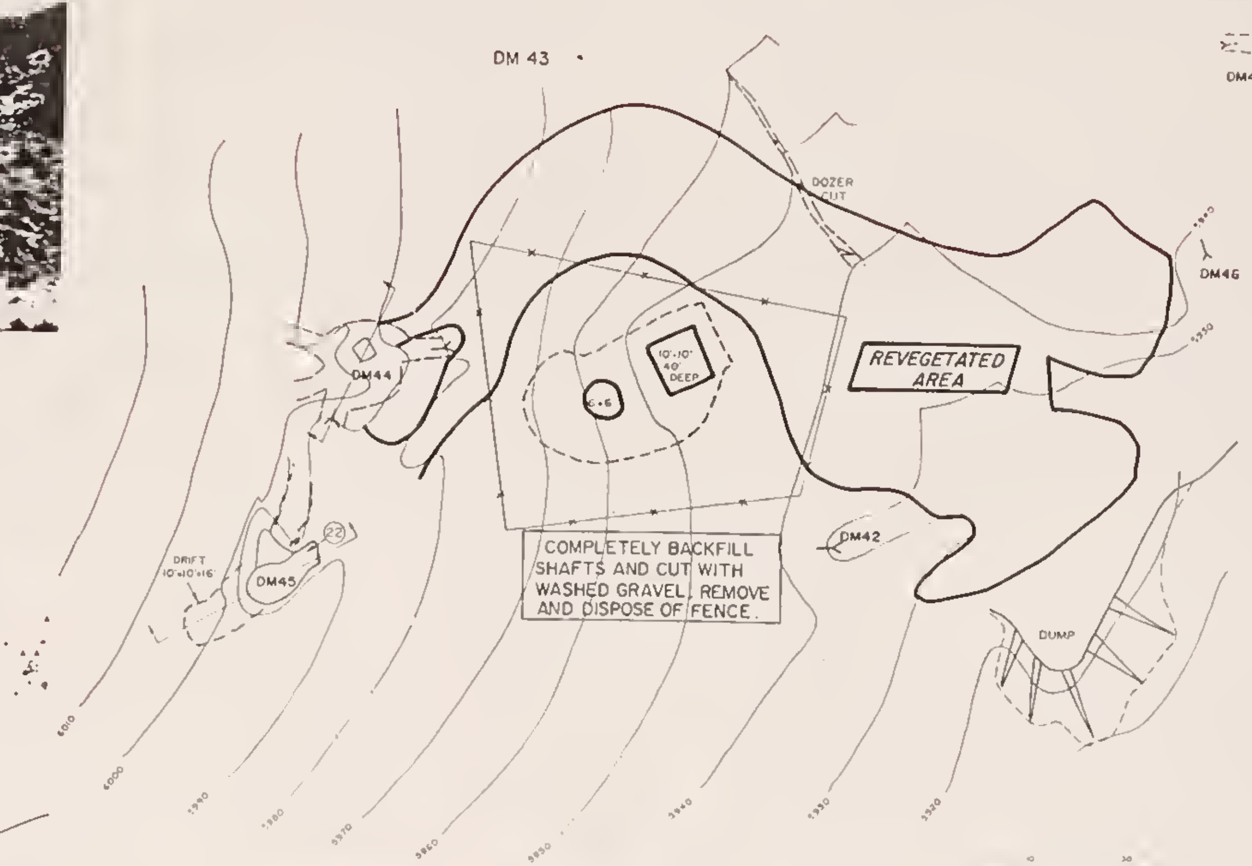
CROSS-SECTION OF SHAFT AND DUMP



⑰ PICTURE 17 IS A VIEW OF DM 48 LOOKING SOUTH

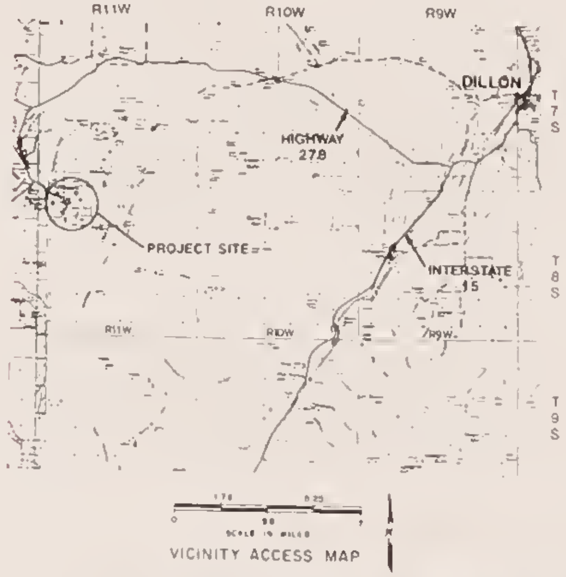
⑱ PICTURE 18 IS LOOKING DOWN INTO SHAFT AT DM 48

⑲ PICTURE 19 IS A VIEW FROM THE HILLSIDE ABOVE DM 49



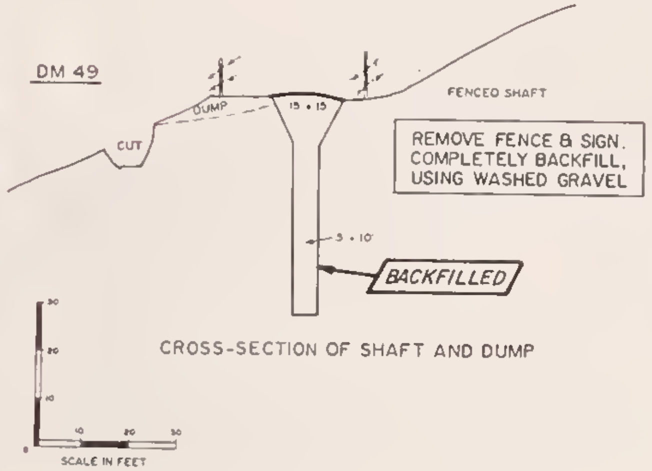
PLAN VIEW

STATE LOCATION MAP



VICINITY ACCESS MAP

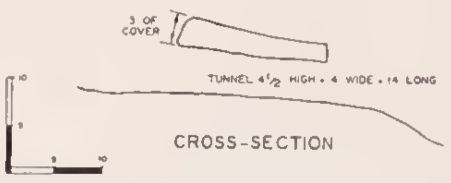
DM 49


FENCED SHAFT
DUMP
CUT
15 × 15
5 × 10'
REMOVE FENCE & SIGN. COMPLETELY BACKFILL, USING WASHED GRAVEL
BACKFILLED
SCALE IN FEET

CROSS-SECTION OF SHAFT AND DUMP

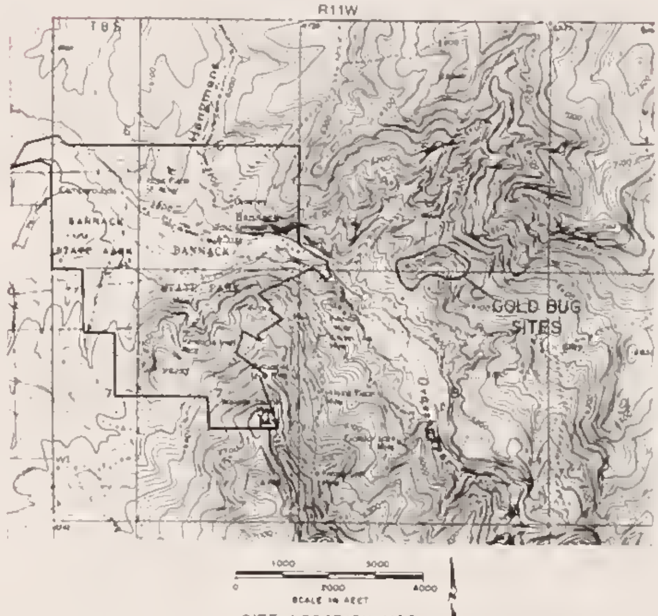
⑳ PICTURE 20 SHOWS ONE ENTRANCE TO THE 14 FOOT LONG TUNNEL AT DM 47.

DM 47



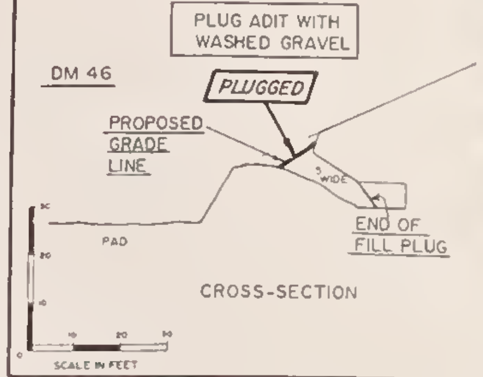
CROSS-SECTION

NO ACTION PER LANDOWNER



SITE LOCATION MAP

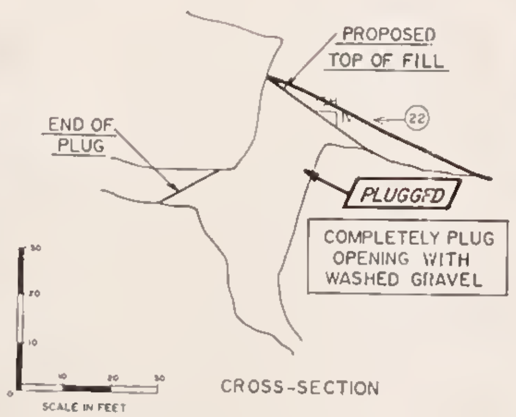
DM 46



CROSS-SECTION

㉑ PICTURE 21 IS A VIEW OF DM 46.

DM 45



CROSS-SECTION

㉒ PICTURE 22 SHOWS THE MASSIVE ROCK IN THE HIGHWALL ABOVE DM 45

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

GOLD BUG
(4 of 4)
SECTIONS 5 8 8, T 8 S, R II W
BEAVERHEAD COUNTY, MONTANA

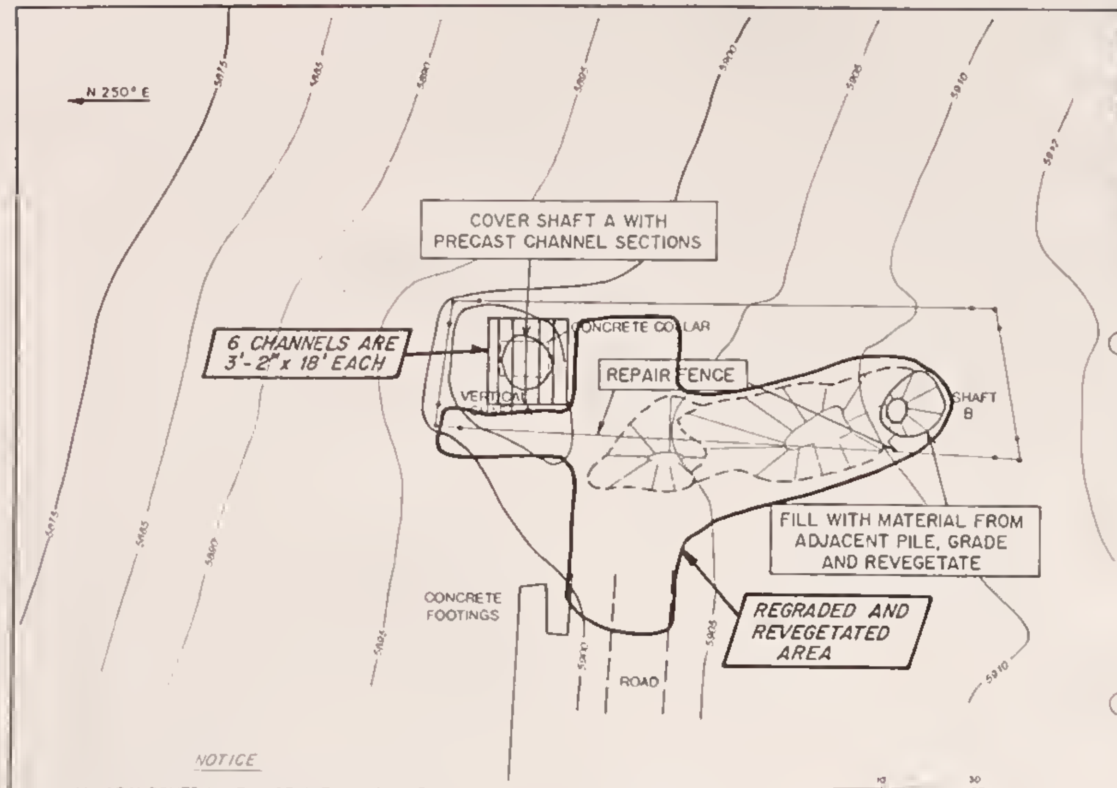
STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY DM

REVISIONS NO.	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO

SHEET NO 16 of 29


N 250° E
5875
5885
5890
5895
5900
5905
5910
5912
COVER SHAFT A WITH PRECAST CHANNEL SECTIONS
6 CHANNELS ARE 3'-2" x 18' EACH
CONCRETE COLLAR
REPAIR FENCE
VERTICAL
SHAFT B
FILL WITH MATERIAL FROM ADJACENT PILE, GRADE AND REVEGETATE
REGRADED AND REVEGETATED AREA
CONCRETE FOOTINGS
ROAD

PLAN VIEW
WASHINGTON SHAFTS

SCALE IN FEET
CONTOUR INTERVAL = 5 FT

NOTICE

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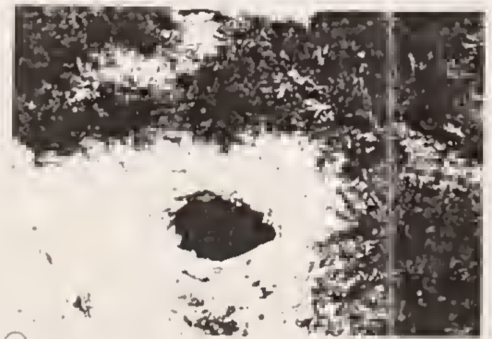
① PICTURE 1 IS A VIEW OF THE WASHINGTON SHAFTS A AND B LOOKING EAST FROM THE ROAD

② PICTURE 2 LOOKING INTO WASHINGTON SHAFT A.

③ PICTURE 3 SHOWS DM 63 AND DM 64 LOOKING SOUTH

④ PICTURE 4 IS A VIEW OF DM 63 LOOKING TOWARD WASHINGTON SHAFT.



⑤ PICTURE 5 IS A VIEW OF THE DM 64 PORTAL

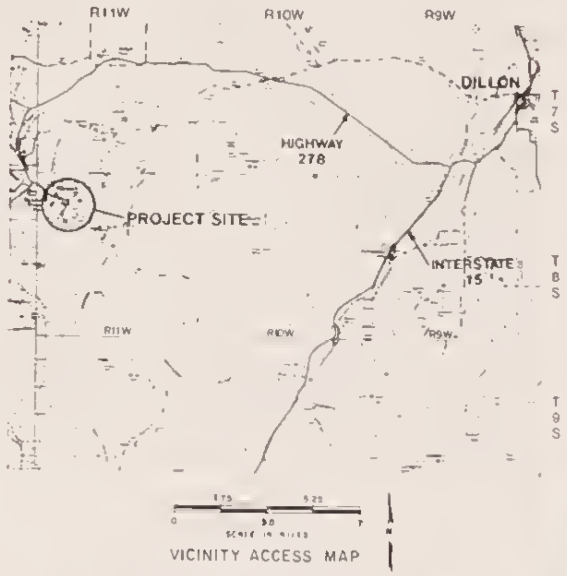
WORK DESCRIPTION

- WASHINGTON SHAFT A - CLEAN OFF THE CONCRETE LINED COLLAR OF SHAFT A COVER THE SHAFT WITH PRECAST CONCRETE CHANNELS
- WASHINGTON SHAFT B - BACKFILL SHAFT B WITH ADJACENT PILE MATERIAL AND REGRADE AFTER COMPLETING ALL WORK ON SHAFTS A AND B, THEN REPAIR THE EXISTING FENCE.
- DM 63 - REMOVE WOOD DEBRIS FROM THE SHAFT AND COMPLETELY BACKFILL THE SHAFT TO THE ELEVATION OF THE COLLAR ON THE DOWNHILL SIDE. FILL MATERIAL WILL COME FROM THE DUMP AND THE SHAFT COLLAR
- DM 64 - BACKFILL THE ADIT WITH AN EARTHEN PLUG 5 FEET LONG (ALONG THE ROOF). USE DUMP MATERIAL LOCATED IN FRONT OF THE ADIT AND ROCK FROM THE HILLSIDE FOR FILL
- REVEGETATE THE BACKFILLED WASHINGTON SHAFT B NO REVEGETATION WILL TAKE PLACE AT DM 63, DM 64 AND WASHINGTON SHAFT A
- NO VEHICLE ACCESS TO DM 63 AND DM 64

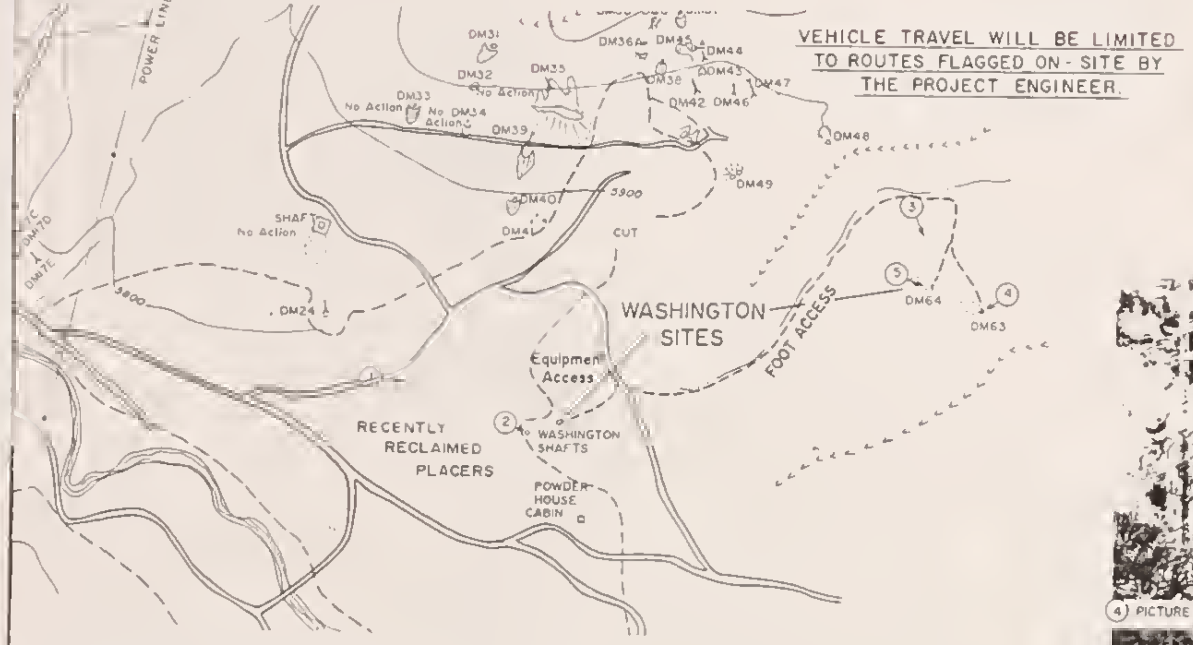
WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
WASHINGTON SHAFT A	19'W x 18'L	INSTALL PRECAST CHANNEL SECTIONS	6 CHANNEL SECTIONS
WASHINGTON SHAFT B	13'W AT TOP x 13'W AT TOP x 18'DEEP	BACKFILL W/ DUMP MATERIAL	60 CU YDS
SHAFT DM 63	10' x 10' x 7'D	BACKFILL SHAFT WITH DUMP MATERIAL AND ROCK	11 CU YDS
ADIT DM 64	5'W x 7'H x 9'D	BACKFILL W/ DUMP MATERIAL	12 CU YDS
WATER	ROADS	FOR DUST SUPPRESSION	0 KGAL
REVEGETATION OF 0.07 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

STATE LOCATION MAP



VICINITY ACCESS MAP



VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

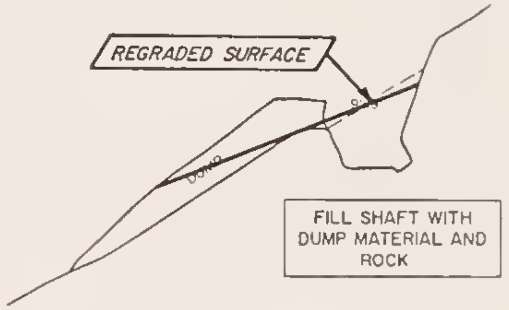
SITE PLAN

ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

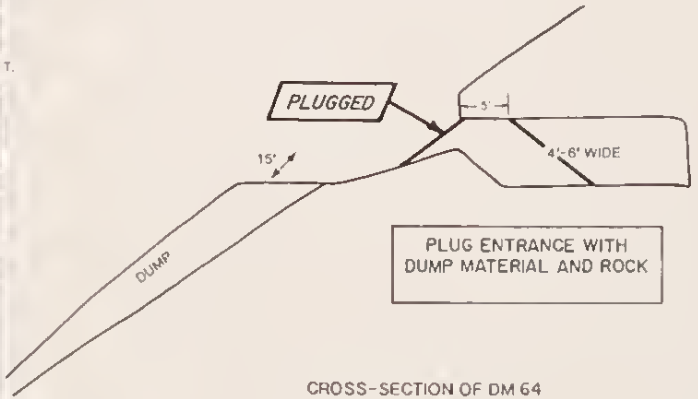
LEGEND

—5625—	*CONTOUR*	① →	*PICTURE NUMBER AND ORIENTATION*
⬭	*WASTE DUMP*	- - - - -	*UNDERGROUND MINE WORKINGS*
— —	*DRAINAGE*	—<	*OPEN ADIT*

SCALE IN FEET

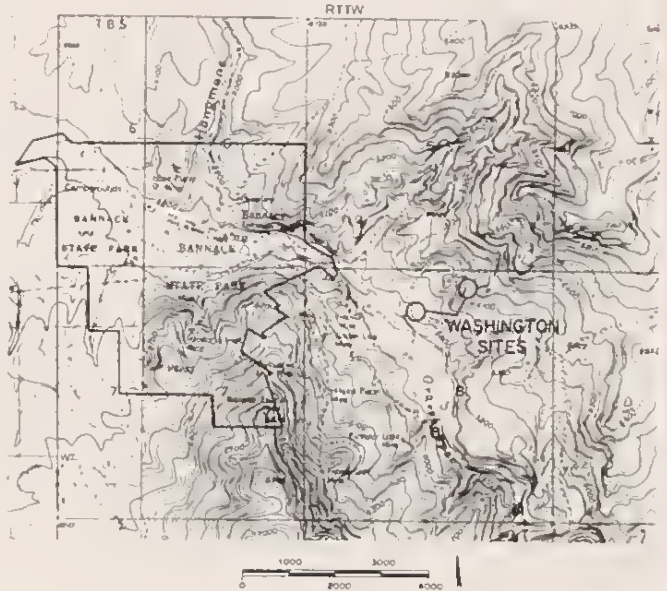


CROSS-SECTION OF DM 63



CROSS-SECTION OF DM 64

SCALE IN FEET



SCALE IN FEET

SITE LOCATION MAP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

WASHINGTON
SECTION 8, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991		
DRAWN BY LNR		
APPROVED BY DM		
REVISIONS NO	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO
SHEET NO 17 of 29		

① PICTURE 1 IS A VIEW OF TIMBERING INSIDE DM 24 LOOKING OUT TOWARD THE ENTRANCE

② PICTURE 2 SHOWS THE PRESENT ENTRANCE TO DM 24.

③ PICTURE 3 SHOWING THE ENTRANCE TO DM 24 LOCATED IN A CLAY BANK THE AREA AROUND IT HAS BEEN REGRADEO.

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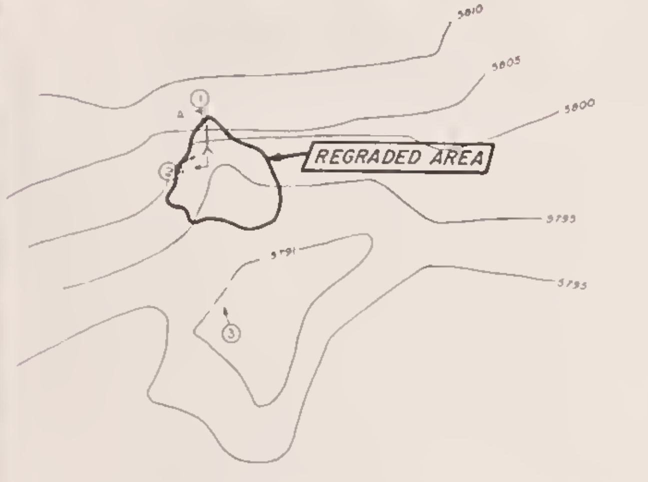
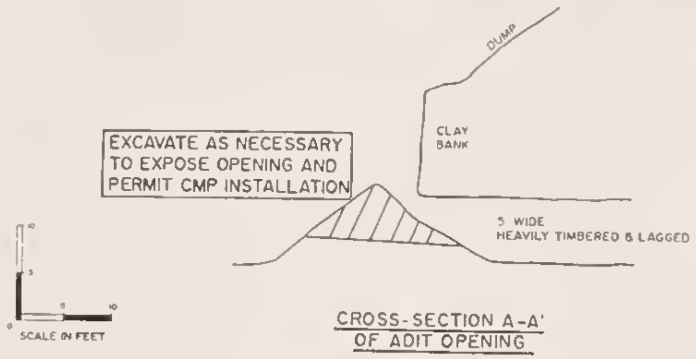
STATE LOCATION MAP

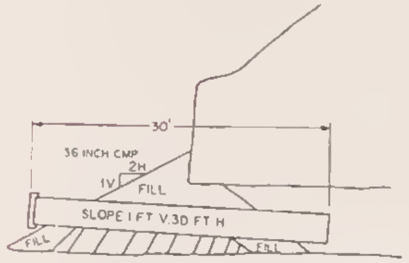


PLAN VIEW


EXCAVATE AS NECESSARY TO EXPOSE OPENING AND PERMIT CMP INSTALLATION
DUMP
CLAY BANK
5' WIDE HEAVILY TIMBERED & LAGGED
SCALE IN FEET
0
5
10

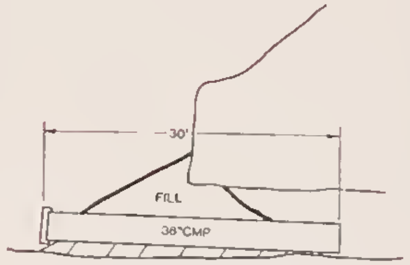
DM 24

CROSS-SECTION A-A' OF ADIT OPENING



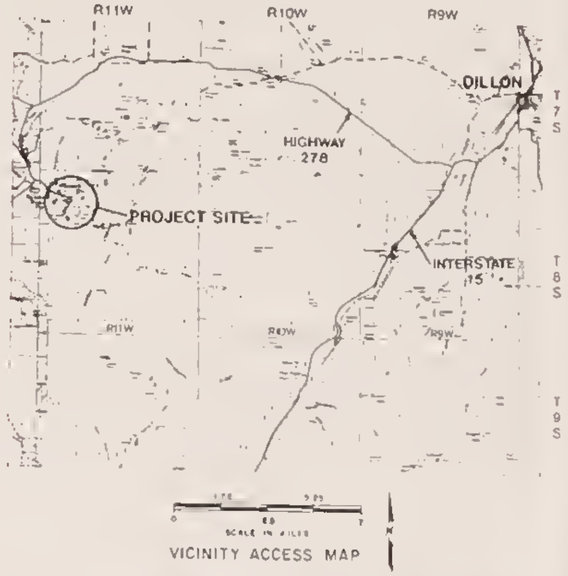
INSTALL CMP WITH LOCKING HATCH IN ADIT OPENING AND BACKFILL TO SEAL OPENING

CROSS-SECTION A-A' OF ADIT OPENING

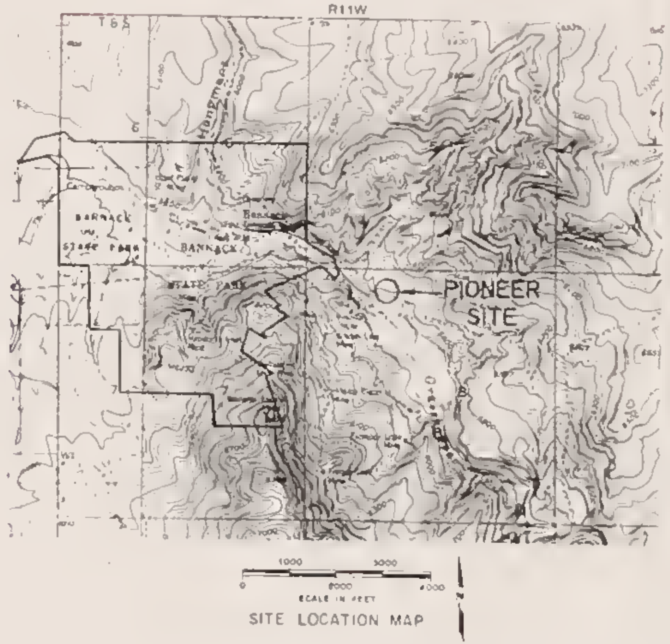


INSTALLED CMP AND BACKFILLED OPENING

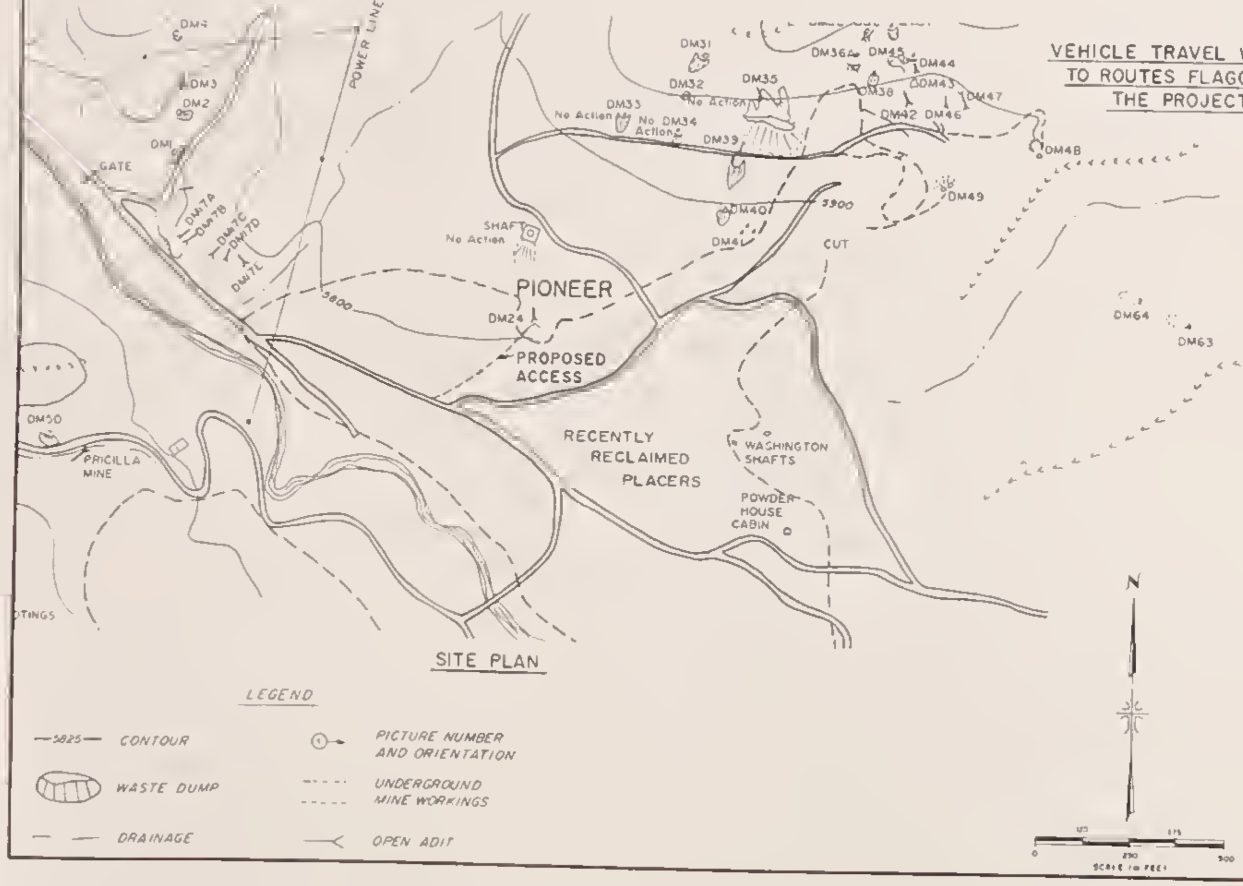
AS-BUILT



VICINITY ACCESS MAP



SITE LOCATION MAP



SITE PLAN

LEGEND

—5825— *CONTOUR*

▨ *WASTE DUMP*

— — *DRAINAGE*

①→ *PICTURE NUMBER AND ORIENTATION*

- - - - *UNDERGROUND MINE WORKINGS*

—< *OPEN ADIT*

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER

WORK DESCRIPTION

- EXCAVATE THE ADIT ENTRANCE TO PERMIT THE INSTALLATION OF A 36 INCH OIAMETER CORREGATED METAL PIPE (CMP) IN THE AOIT.
- INSTALL A 36 INCH OIAMETER, 30 FOOT LONG CMP IN THE AOIT A TOTAL OF 14 FEET OF THE CMP WILL BE INSIDE THE AOIT ANO 16 FEET WILL BE OUTSIDE ON A BEO OF FILL. FILL WILL BE PLACED INSIDE THE AOIT AS FAR AS POSSIBLE AND OVER THE EXPOSEO CMP. BLENO THE FILL INTO THE EXISTING HILLSIOE. A LOCKING METAL GRATE WILL BE INSTALLEO ON THE ENO OF THE CMP.
- REVEGETATE THE BACKFILLEO AREA OVER THE CMP AND ANY OTHER OISTURBED AREAS

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATEO OUANTITY
CLOSE PIONEER ADIT	36" DIAMETER • 30' LONG CMP WITH LOCKING GRATE	INSTALL CMP INTO ADIT OPENING ANO BACKFILL AROUNO ANO OVER CMP. FABRICATE LOCKING GRATE FOR THE ENTRANCE	1 EACH
REVEGFTATION OF D.03 ACRES	FERTILIZER AT 92.6 LBS SEED AT 26.D LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROAOCAST SEED SPREAO & CRIMP MULCH	

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

PIONEER

SECTION 8, T 8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY CM

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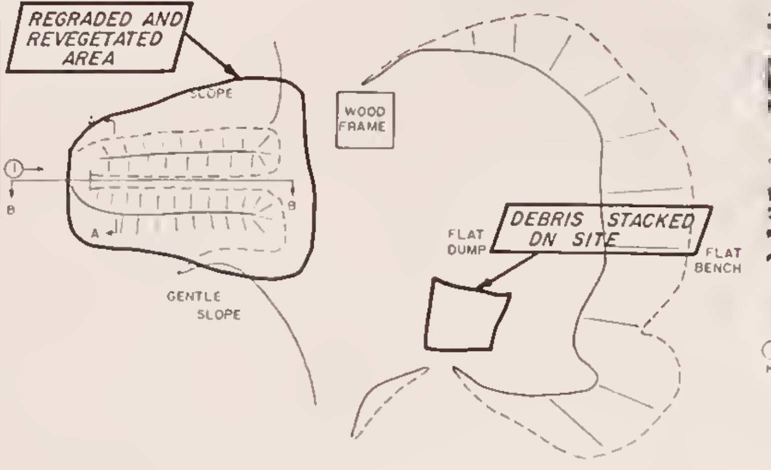
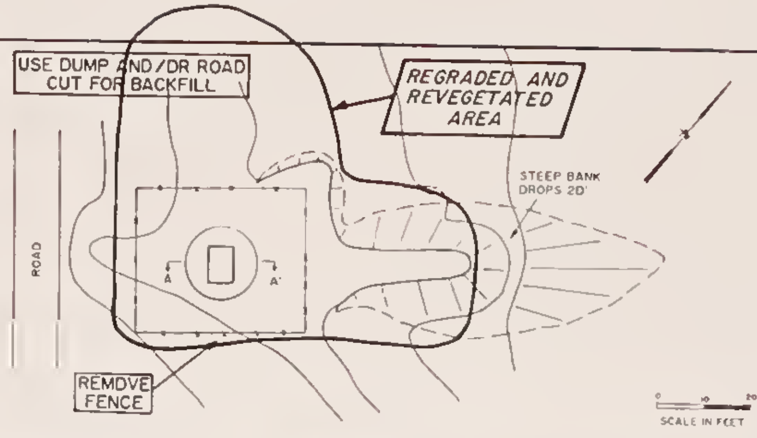
As-Built	April 1992	DLO

SHEET NO 18 of 29

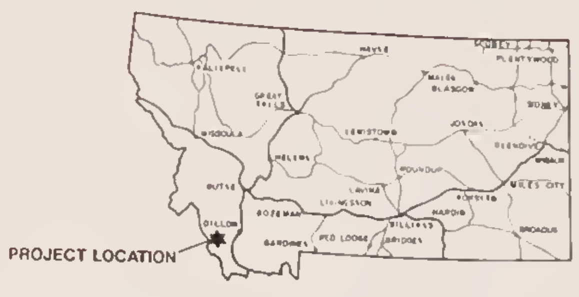


PLAN VIEW OF DUMP AND ADIT
DM 20

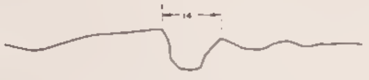
① PICTURE 1 IS LOOKING DOWN THE ADIT TRENCH TOWARD THE DUMP AT DM 20 MATERIAL HAS BEEN PILED ON BOTH SIDES OF THE TRENCH


USE DUMP AND/OR ROAD CUT FOR BACKFILL
REGRADED AND REVEGETATED AREA
STEEP BANK DROPS 20'
ROAD
A
A'
REMOVE FENCE
SCALE IN FEET

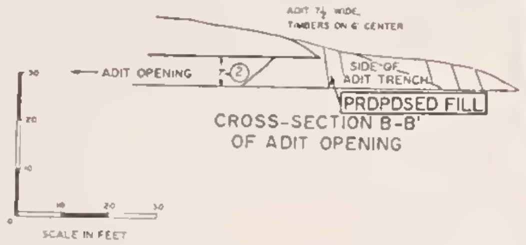
PLAN VIEW OF DUMP AND SHAFT



STATE LOCATION MAP



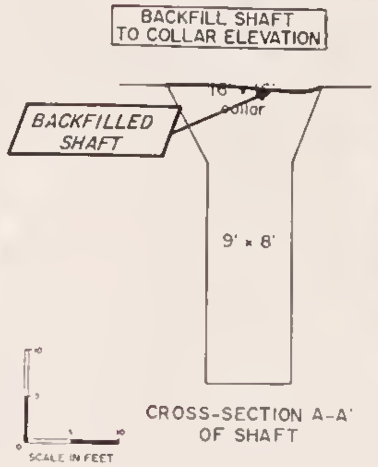
CROSS-SECTION A-A'
OF ADIT TRENCH



CROSS-SECTION B-B'
OF ADIT OPENING

DM 20

② PICTURE 2 SHOWS THE TIMBER AND LAGGING INSIDE DM 20

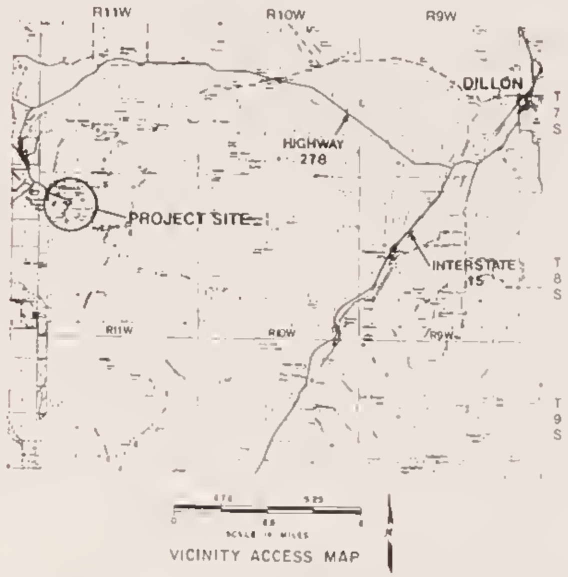


CROSS-SECTION A-A'
OF SHAFT

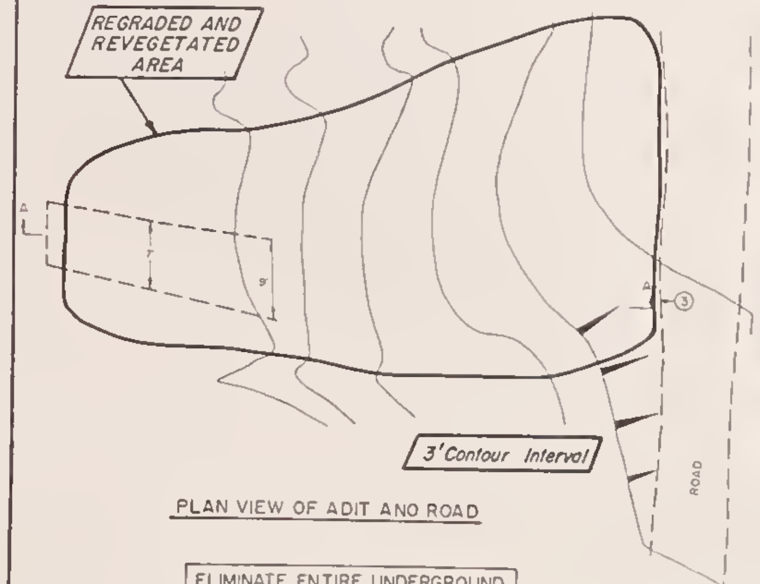
DM 21

④ PICTURE 4 IS LOOKING NORTH FROM THE ROAD AT THE DUMP AND SHAFT COLLAR AT DM 21

VEHICLE TRAVEL WILL BE LIMITED
TO ROUTES FLAGGED ON-SITE BY
THE PROJECT ENGINEER.



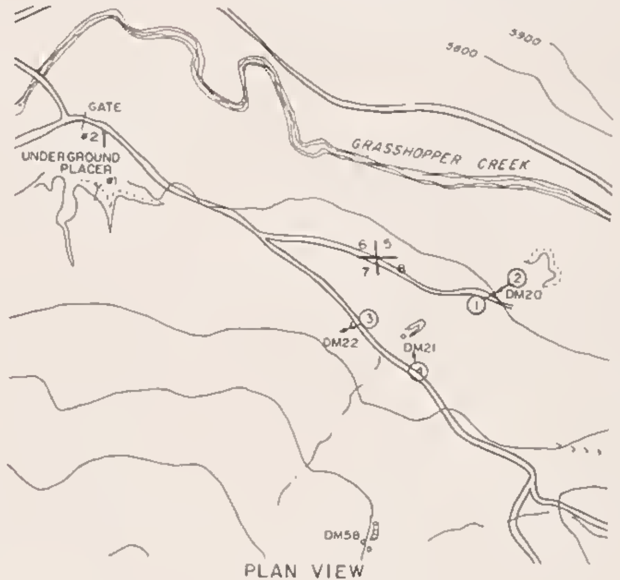
VICINITY ACCESS MAP



PLAN VIEW OF ADIT AND ROAD

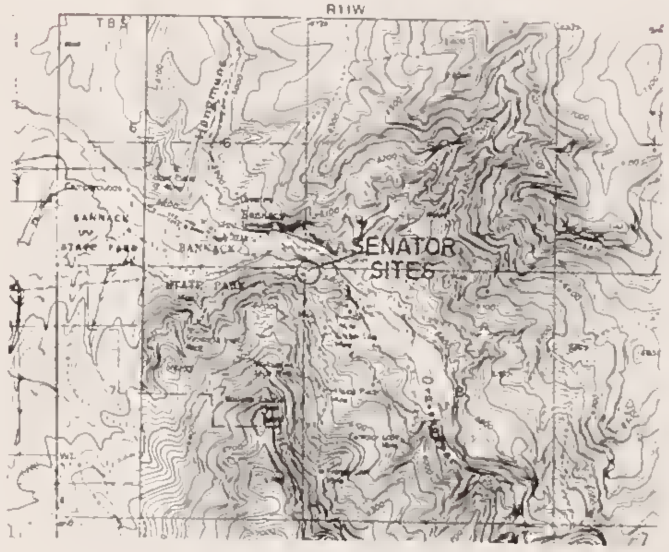
③ PICTURE 3 IS LOOKING SW FROM ROAD AT DM 22

CONSTRUCTION IS LIMITED TO
THE AREA SHOWN ON THIS
TOPOGRAPHIC MAP

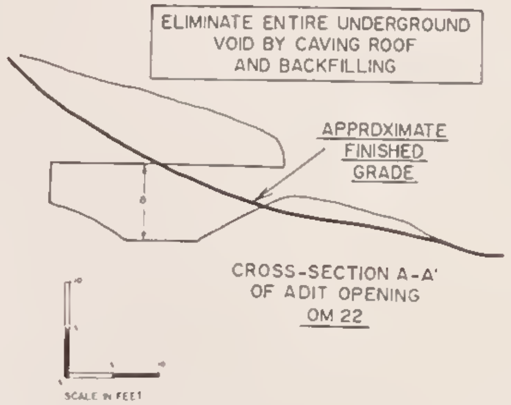


PLAN VIEW

ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY



SITE LOCATION MAP


ELIMINATE ENTIRE UNDERGROUND VOID BY CAVING ROOF AND BACKFILLING
APPROXIMATE FINISHED GRADE
SCALE IN FEET

CROSS-SECTION A-A'
OF ADIT OPENING
OM 22

WORK DESCRIPTION

- OM 20 · BACKFILL THE ADIT WITH A 10 FOOT EARTHEN PLUG USING ADJACENT ADIT TRENCH MATERIAL OR DUMP MATERIAL. THE TIMBERS AND LAGGING ARE NOT BE DISTURBED. REGRADE THE ADIT TRENCH TO BLEND INTO THE HILLSIDE
- DM 21 · REMOVE AND DISPOSE OF THE EXISTING FENCE AND COMPLETELY BACKFILL THE SHAFT WITH DUMP OR ROAD CUT MATERIAL.
- OM 22 · EMILINATE THE ENTIRE UNDERGROUND VOID BY CAVING THE ROOF AND BACKFILLING. REGRADE TO BLEND INTO THE HILLSIDE
- DISPOSE OF DEBRIS AT ALL SITES.
- REVEGETATE ALL DISTURBED AREAS.

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
ADIT DM 20	7.5'W x 7'H x 10'D	BACKFILL W/ ADJ MATERIAL REGRADE ADIT TRENCH	37 CU. YDS 36 CU. YDS
SHAFT OM 21	9.16 x 8.16' x 31'D	BACKFILL W/ DUMP MATERIAL	110 CU YDS
ADIT OM 22	7.9'W x 6.8'H x 25'D	BACKFILL W/ ROOF MATERIAL REGRADE BACKFILLED AREA	38 CU YDS 12 CU YDS
DEBRIS REMOVAL	ALL SITES	REMOVE AND DISPOSE	5 PICKUP LOADS
WATER	BACKFILL AND ROADS	FOR COMPACTION AND DUST SUPPRESSION	0 KGAL
REVEGETATION OF 0.18 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

LEGEND

—5825—	*CONTOUR*	①→	*PICTURE NUMBER AND ORIENTATION*
⬭	*WASTE DUMP*	- - - -	*UNDERGROUND MINE WORKINGS*
— —	*DRAINAGE*	—<	*OPEN ADIT*

NOTICE

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

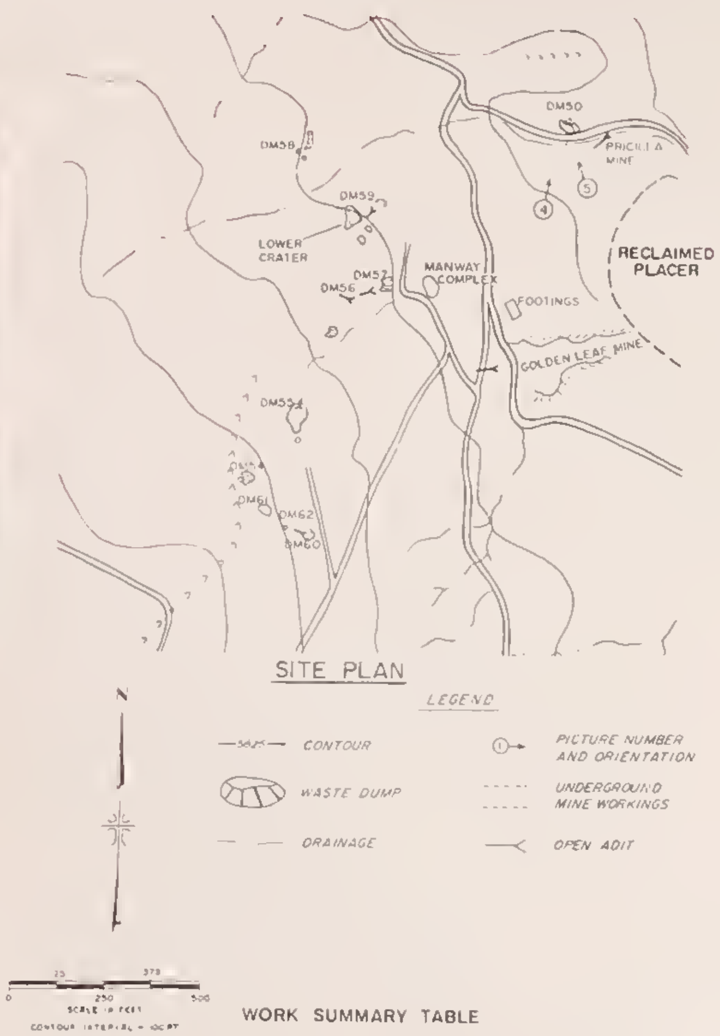
SENATOR
SECTIONS 7 & 8, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE	March 1991	
DRAWN BY	LNR	
APPROVED BY	CM	
REVISIONS		
NO	DATE	BY
1	6/20/91	DLD
As-Built	April 1992	DLD

SHEET NO 19 of 29



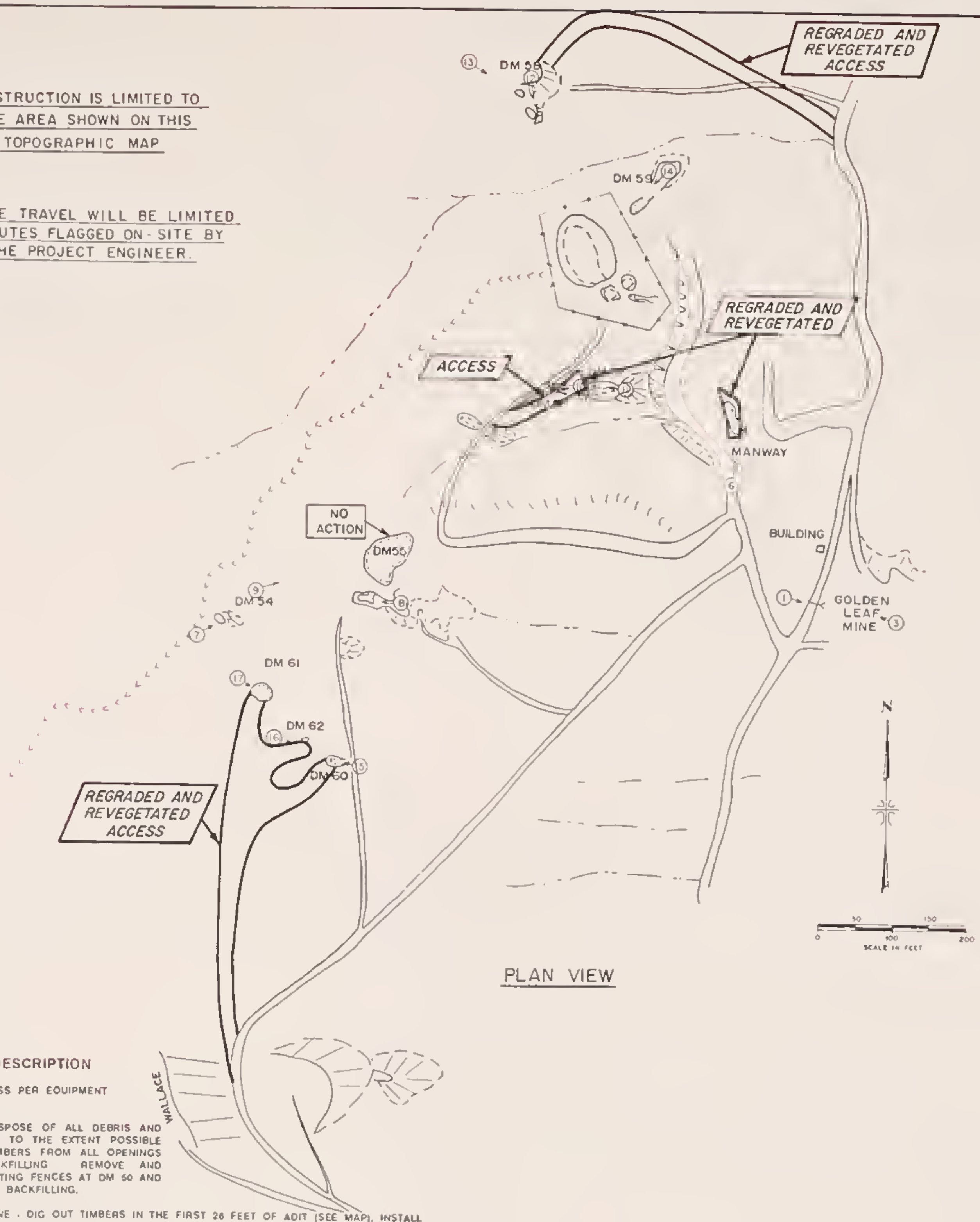
SITE PLAN

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
GOLDEN LEAF MINE	36' DIAMETER BY 35 FT LONG CMP WITH LOCKING GRATE	INSTALL CMP, BACKFILL TO SECURE AND FABRICATE GRATE AND INSTALL ON ENTRANCE	1 EACH
MANWAY COMPLEX	40' x 70' x 4.5	CAVE SURFACE AND REGRADE	470 CU. YDS
OPENING DM 50	5-15' x 10-15' x 45'D	REMOVE FENCE AND BACKFILL WITH DUMP MATERIAL	111 CU YDS
OPENING DM 54	6-12' x 6-12' x 18'D	BACKFILL W/ DUMP MATERIAL	42 CU. YDS
OPENING DM 55	LEAVE EXISTING FENCE IN PLACE	NO ACTION PER LANDOWNER REQUEST	N/A
OPENING DM 56	5.5'W x 5'H x 27'D	BACKFILL WITH WASHED GRAVEL	42 CU. YDS
OPENING DM 57	4 x 8' x 20'	COLLAPSE AND FILL TRENCH WITH WASHED GRAVEL	57 CU. YDS
OPENING DM 58	4-15' x 5-15' x 35'D + 7.5' x 7.5' x 4'D	REMOVE FENCE AND BACKFILL SHAFT WITH WASHED GRAVEL AND GRADE TO ELIMINATE DEPRESSION	162 CU YDS
OPENING DM 59	SEE CROSS SECTION	BACKFILL ADIT TRENCH WITH WASHED GRAVEL	126 CU. YDS
OPENING DM 60	SEE CROSS SECTION	CAVE ROOF, FILL ADIT AND TRENCH WITH WASHED GRAVEL	85 CU. YDS
OPENING DM 61	SEE CROSS SECTION	BACKFILL THE OPENING WITH WASHED GRAVEL	601 CU. YDS
OPENING DM 62	6' x 6' x 5'	INSTALL BULKHEAD AND FILL TO SURFACE WITH CONCRETE	5.5 YARDS OF CONCRETE
TOTAL	ALL 12 OPENINGS		1696 CU YDS
DEBRIS REMOVAL	ALL SITES	REMOVE AND DISPOSE	25 PICKUP LOADS
WATER	BACKFILL AND ROADS	FOR COMPACTION AND DUST SUPPRESSION	8 KGAL
REVEGETATION OF 0.74 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

CONSTRUCTION IS LIMITED TO THE AREA SHOWN ON THIS TOPOGRAPHIC MAP

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.



PLAN VIEW

WORK DESCRIPTION

- ESTABLISH ACCESS PER EQUIPMENT REQUIREMENTS
- REMOVE AND DISPOSE OF ALL DEBRIS AND VEGETATION AND TO THE EXTENT POSSIBLE REMOVE THE TIMBERS FROM ALL OPENINGS PRIOR TO BACKFILLING. REMOVE AND DISPOSE OF EXISTING FENCES AT DM 50 AND DM 58 PRIOR TO BACKFILLING.
- GOLDEN LEAF MINE - DIG OUT TIMBERS IN THE FIRST 26 FEET OF ADIT (SEE MAP). INSTALL A 35 FEET LONG, 36 INCH DIAMETER CMP, BACKFILL TO SECURE CMP IN PLACE, GRADE TO PROVIDE POSITIVE DRAINAGE AND SLOPE STABILITY
- MANWAY COMPLEX - CAVE THE SURFACE AND REGRADE THE AREA **MOVE STRUCTURE**
- OPENINGS DM 50 AND DM 54 - BACKFILL THE OPENINGS WITH DUMP MATERIAL AND REGRADE.
- OPENINGS DM 56 AND DM 61 - BACKFILL WITH WASHED GRAVEL.
- OPENINGS DM 57 AND DM 60 - COLLAPSE DM 57 AND FILL THE TRENCH AND CAVE THE ROOF OF DM 60 AND FILL THE ADIT AND TRENCH WITH WASHED GRAVEL.
- OPENING DM 58 - BACKFILL SHAFT WITH WASHED GRAVEL AND GRADE TO ELIMINATE DEPRESSION
- OPENING DM 59 - BACKFILL THE ADIT TRENCH WITH WASHED GRAVEL.
- OPENING DM 62 - INSTALL A BULKHEAD AND FILL TO THE SURFACE WITH A REINFORCED CONCRETE PLUG.
- REVEGETATE DISTURBED AREAS AT GOLDEN LEAF MINE, MANWAY COMPLEX, DM 50 AND DM54

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NOTICE

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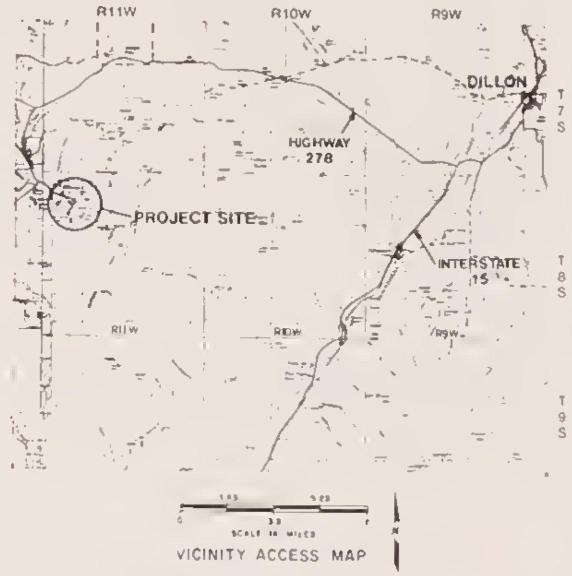
STATE LOCATION MAP



VICINITY ACCESS MAP

SITE LOCATION MAP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

GOLDEN LEAF
(1 of 4)
SECTIONS 7 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

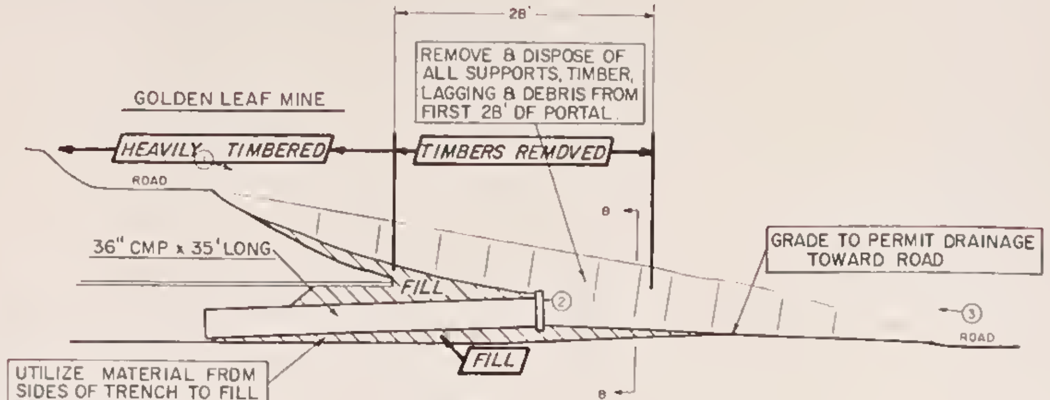
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNA
APPROVED BY: CM

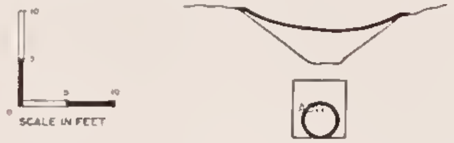
REVISIONS NO	DATE	BY
As-Built	April 1992	DLO
2	7/16/91	DLO

SHEET NO 20 of 29

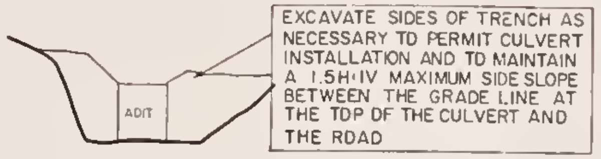
① PICTURE 1 IS LOOKING DOWN INTO THE TRENCH AT THE GOLDEN LEAF MINE


GOLDEN LEAF MINE
28'
REMOVE & DISPOSE OF ALL SUPPORTS, TIMBER, LAGGING & DEBRIS FROM FIRST 28' OF PORTAL
HEAVILY TIMBERED
TIMBERS REMOVED
ROAD
36" CMP x 35' LONG
FILL
②
B
GRADE TO PERMIT DRAINAGE TOWARD ROAD
③
ROAD
FILL
B
UTILIZE MATERIAL FROM SIDES OF TRENCH TO FILL BENEATH AND AROUND CULVERT AS INDICATED

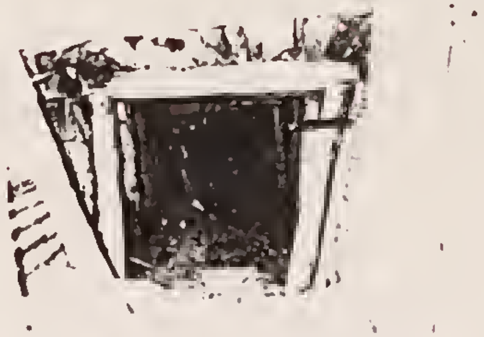
AS-BUILT



CROSS-SECTION A-A'


ADIT
EXCAVATE SIDES OF TRENCH AS NECESSARY TO PERMIT CULVERT INSTALLATION AND TO MAINTAIN A 1.5H:1V MAXIMUM SIDE SLOPE BETWEEN THE GRADE LINE AT THE TOP OF THE CULVERT AND THE ROAD

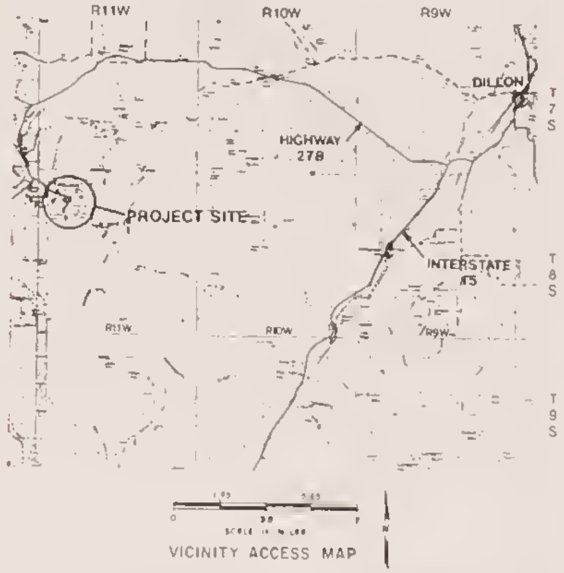
CROSS-SECTION B-B'



② PICTURE 2 SHOWS THE INSIDE OF THE GOLDEN LEAF MINE

③ PICTURE 3 SHOWS THE PORTAL AT THE GOLDEN LEAF MINE LOOKING FROM THE LOWER ROAD

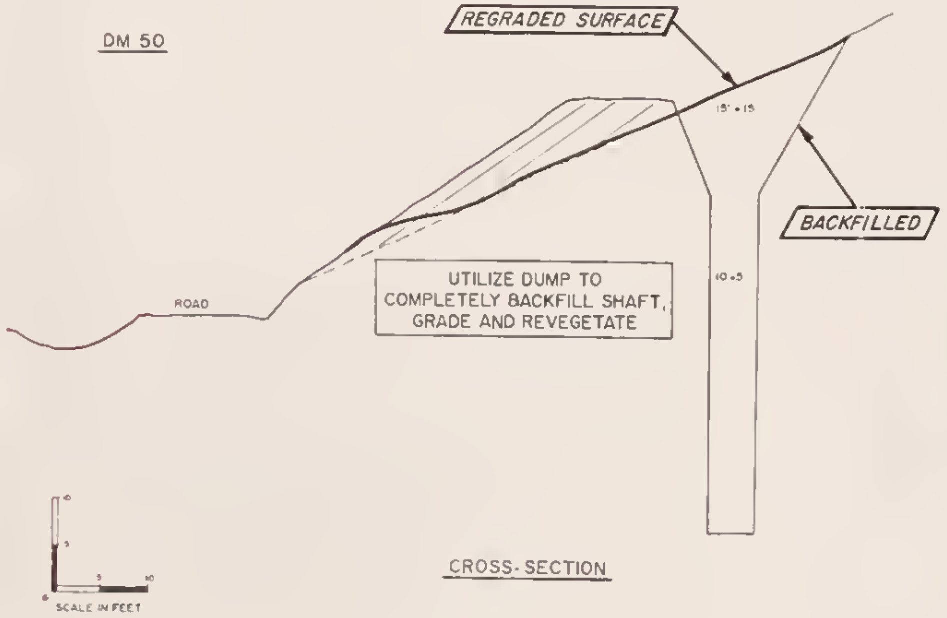
STATE LOCATION MAP



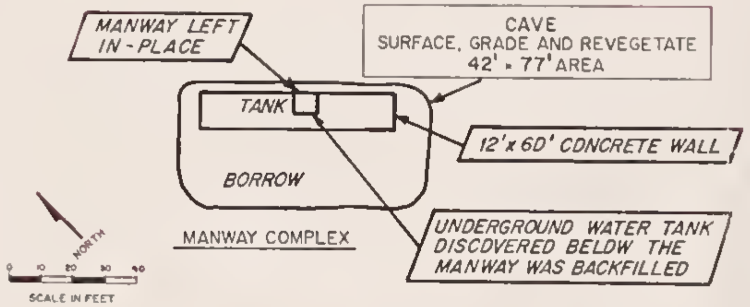
VICINITY ACCESS MAP

④ PICTURE 4 IS LOOKING ACROSS THE DRAW AT DM 50

⑤ PICTURE 5 IS A VIEW OF HILLSIDE ACCESS TO DM 50

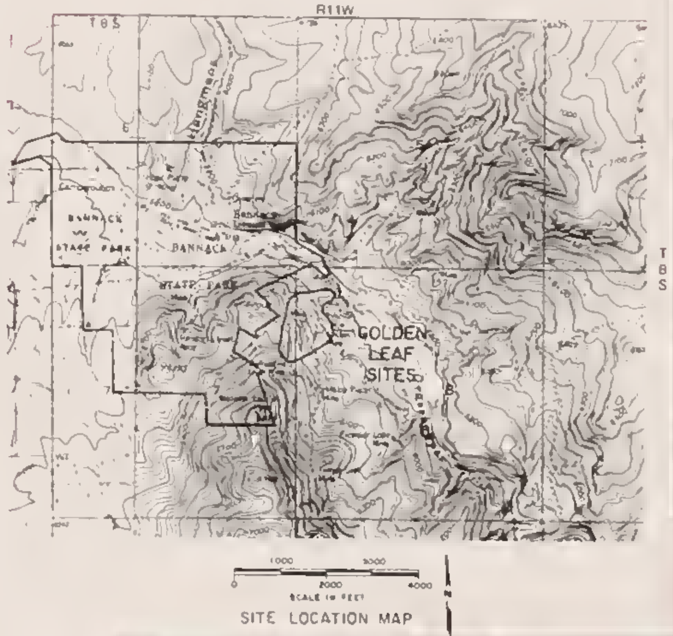


CROSS-SECTION


MANWAY LEFT IN-PLACE
CAVE SURFACE, GRADE AND REVEGETATE 42' × 77' AREA
TANK
12' x 60' CONCRETE WALL
BORROW
UNDERGROUND WATER TANK DISCOVERED BELOW THE MANWAY WAS BACKFILLED
NORTH
0
10
20
30
40
SCALE IN FEET

MANWAY COMPLEX

⑥ PICTURE 6 SHOWS THE MANWAY STRUCTURE WHICH WILL BE PRESERVED BY MOVING IT TO A NEARBY SITE.



SITE LOCATION MAP

NOTICE

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

GOLDEN LEAF
(2 of 4)
SECTIONS 7 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY DM

REVISIONS NO	DATE	BY
As-Built	April 1992	DLO
2	7/16/91	DLO

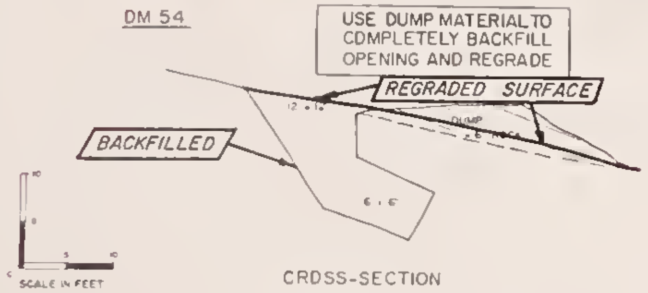
SHEET NO 21 of 29

⑦ PICTURE 7 IS A VIEW OF THE DUMP AND COLLAR AT DM 54

⑧ PICTURE 9 SHOWS THE SHAFT ASSOCIATED WITH THE DM 55 CRATER.

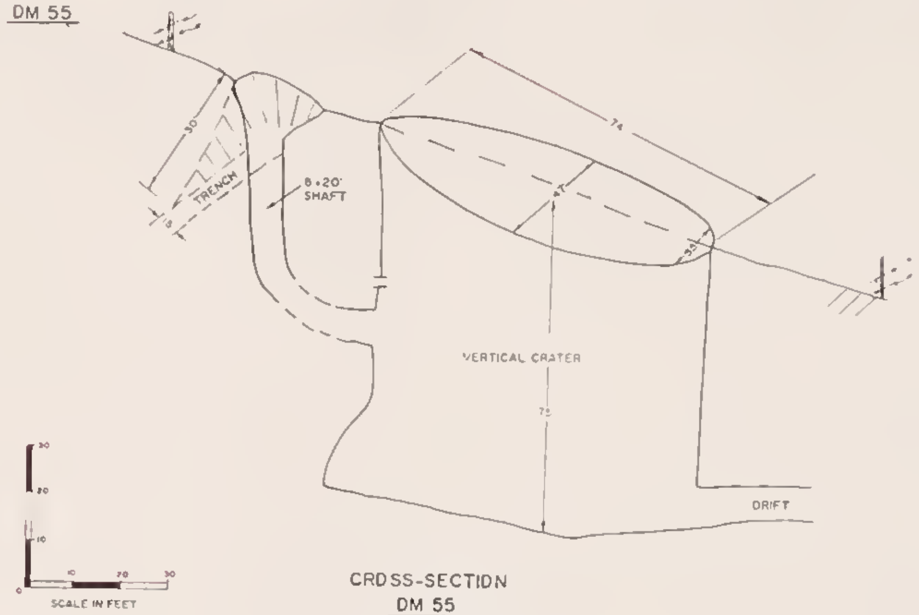
⑨ PICTURE 9 IS LOOKING NORTHEAST AT THE TOP OF DM 55 CRATER

STATE LOCATION MAP



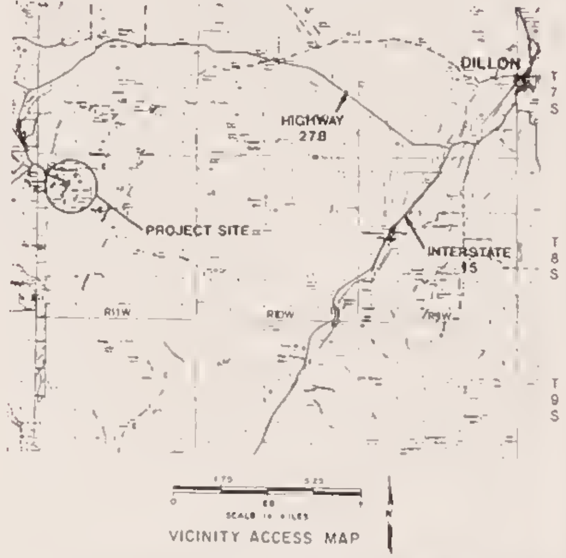
USE DUMP MATERIAL TO COMPLETELY BACKFILL OPENING AND REGRADE

CROSS-SECTION
DM 54



CROSS-SECTION
DM 55

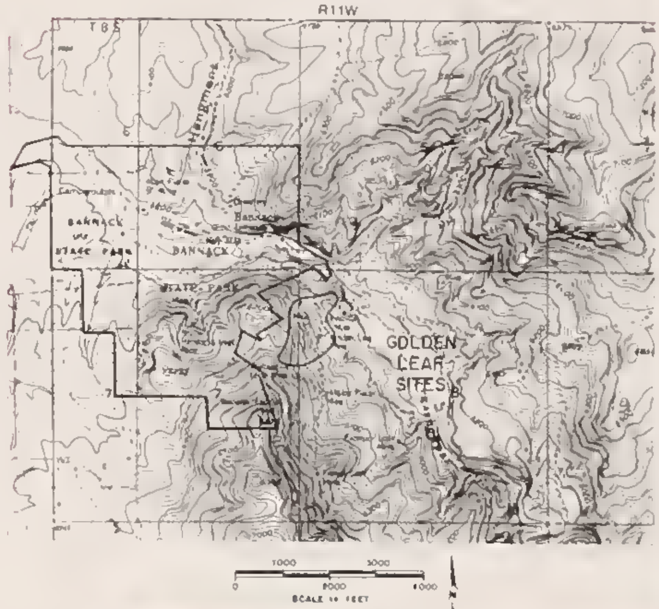
NO ACTION AT DM55 AT THE REQUEST OF THE LANDOWNER



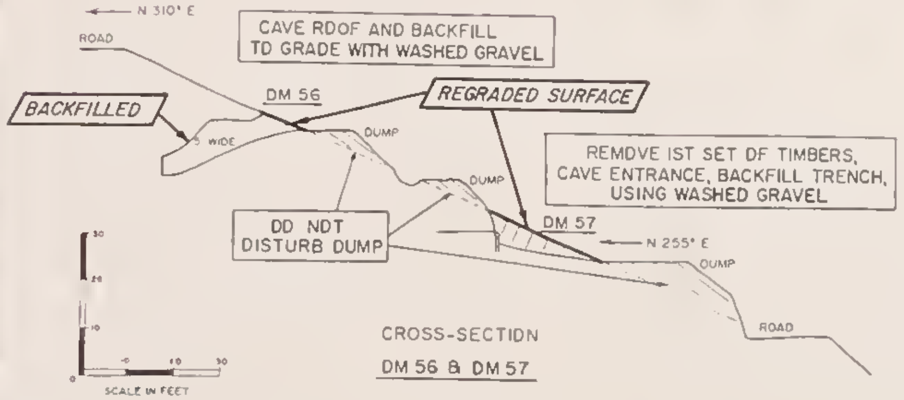
VICINITY ACCESS MAP

⑩ PICTURE 10 IS LOOKING AT THE DM 56 ENTRANCE.

⑪ PICTURE 11 IS A VIEW OF THE PORTAL AREA AT DM 57.



SITE LOCATION MAP



CAVE ROOF AND BACKFILL TO GRADE WITH WASHED GRAVEL

REMOVE 1ST SET OF TIMBERS, CAVE ENTRANCE, BACKFILL TRENCH, USING WASHED GRAVEL

DO NOT DISTURB DUMP

CROSS-SECTION
DM 56 & DM 57

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

GOLDEN LEAF
(3 of 4)
SECTIONS 7 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
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REVISIONS		
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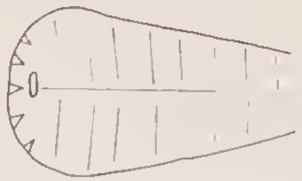
As-Built	April 1992	DLO

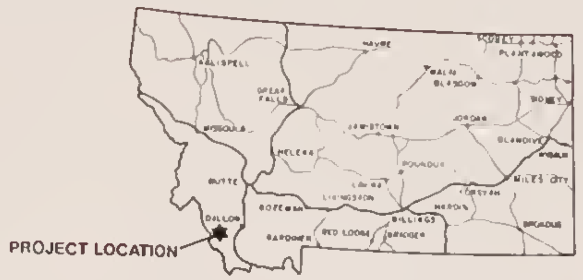
SHEET NO 22 of 29

⑫ PICTURE 12 IS A VIEW OF THE DEPRESSION BELOW SHAFT AT OM 58

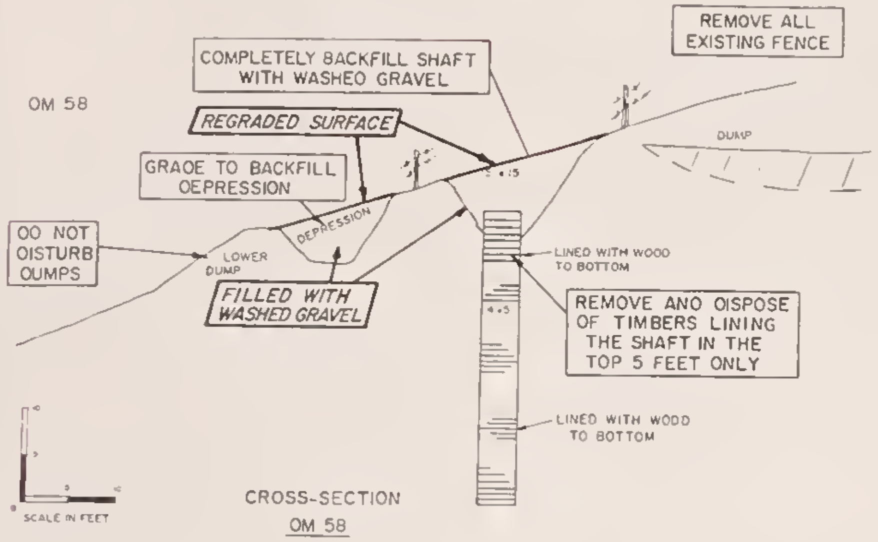
⑬ PICTURE 13 IS OF THE TIMBERS LINING THE OM 58 SHAFT

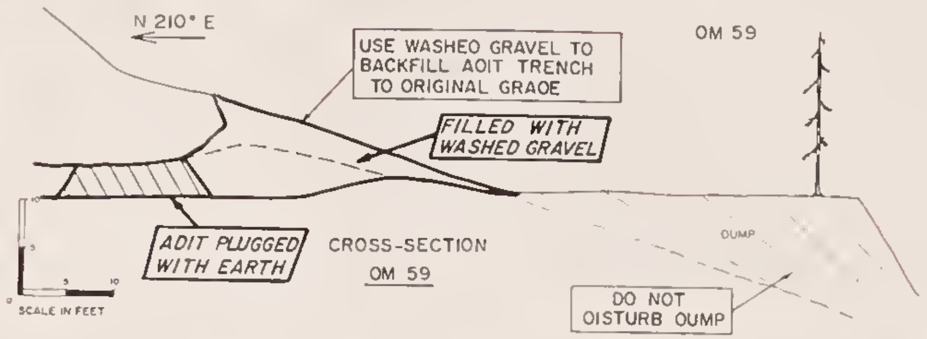
⑭ PICTURE 14 IS A VIEW OF ADIT TRENCH AT OM 59 LOOKING FROM DUMP

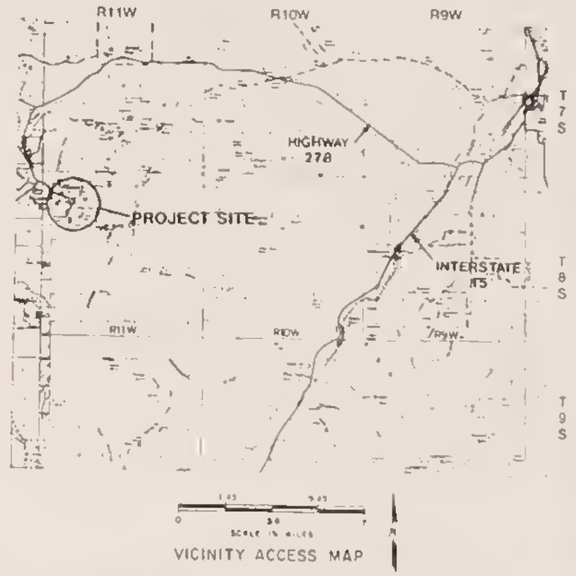

PLAN VIEW OF TRENCH
OM 59



STATE LOCATION MAP


OM 58
REMOVE ALL EXISTING FENCE
COMPLETELY BACKFILL SHAFT WITH WASHED GRAVEL
REGRADED SURFACE
GRADE TO BACKFILL DEPRESSION
DO NOT DISTURB DUMPS
LOWER DUMP
DEPRESSION
DUMP
FILLED WITH WASHED GRAVEL
LINED WITH WOOD TO BOTTOM
REMOVE AND DISPOSE OF TIMBERS LINING THE SHAFT IN THE TOP 5 FEET ONLY
LINED WITH WOOD TO BOTTOM
SCALE IN FEET
CROSS-SECTION
OM 58

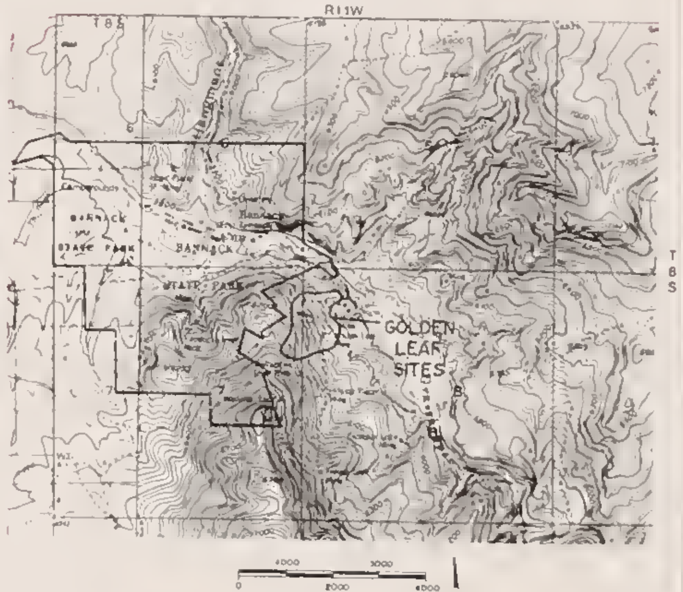

N 210° E
OM 59
USE WASHED GRAVEL TO BACKFILL ADIT TRENCH TO ORIGINAL GRADE
FILLED WITH WASHED GRAVEL
ADIT PLUGGED WITH EARTH
DUMP
DO NOT DISTURB DUMP
SCALE IN FEET
CROSS-SECTION
OM 59



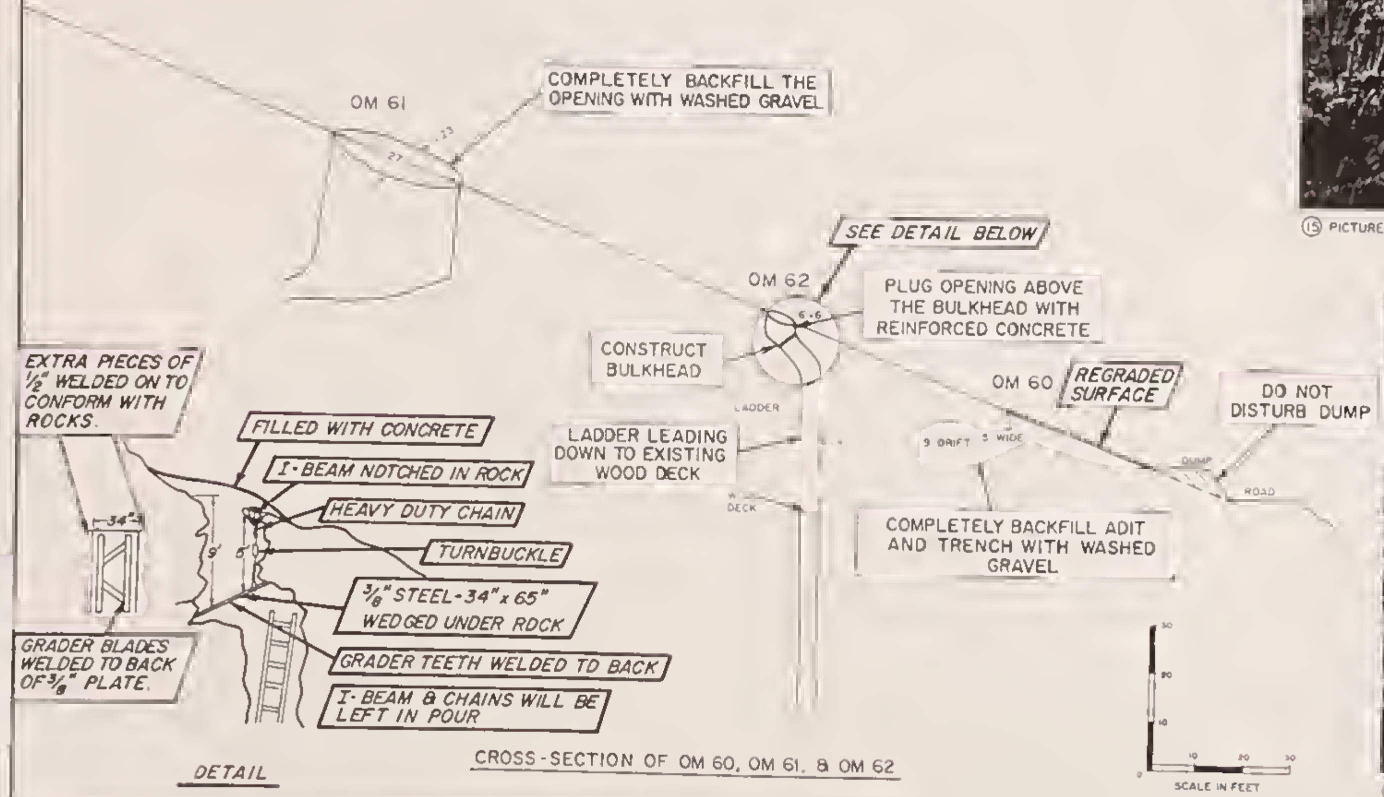
VICINITY ACCESS MAP

⑮ PICTURE 15 IS LOOKING AT ADIT JUST ABOVE THE ROAD AT OM 60.

⑯ PICTURE 16 IS OF THE TOP OF THE RAISE AT OM 62



SITE LOCATION MAP


OM 61
COMPLETELY BACKFILL THE OPENING WITH WASHED GRAVEL
SEE DETAIL BELOW
OM 62
PLUG OPENING ABOVE THE BULKHEAD WITH REINFORCED CONCRETE
CONSTRUCT BULKHEAD
LADDER
LADDER LEADING DOWN TO EXISTING WOOD DECK
DECK
OM 60
REGRADED SURFACE
DO NOT DISTURB DUMP
DUMP
ROAD
COMPLETELY BACKFILL ADIT AND TRENCH WITH WASHED GRAVEL
SCALE IN FEET
EXTRA PIECES OF 1/2" WELDED ON TO CONFORM WITH ROCKS.
34"
FILLED WITH CONCRETE
I-BEAM NOTCHED IN ROCK
HEAVY DUTY CHAIN
TURNBUCKLE
9'
5'
3/8" STEEL-34" x 65" WEDGED UNDER ROCK
GRADER BLADES WELDED TO BACK OF 3/8" PLATE.
GRADER TEETH WELDED TO BACK
I-BEAM & CHAINS WILL BE LEFT IN POUR
DETAIL

CROSS-SECTION OF OM 60, OM 61, & OM 62

⑰ PICTURE 17 IS A VIEW OF THE CRATER WALL ON THE DOWNHILL SIDE.

ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

NOTICE

AN ABANDONED MINE UNDERLIES THIS SITE MANY POTENTIAL HAZARDS EXIST. THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

GOLDEN LEAF
(4 of 4)
SECTIONS 7 & 8, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

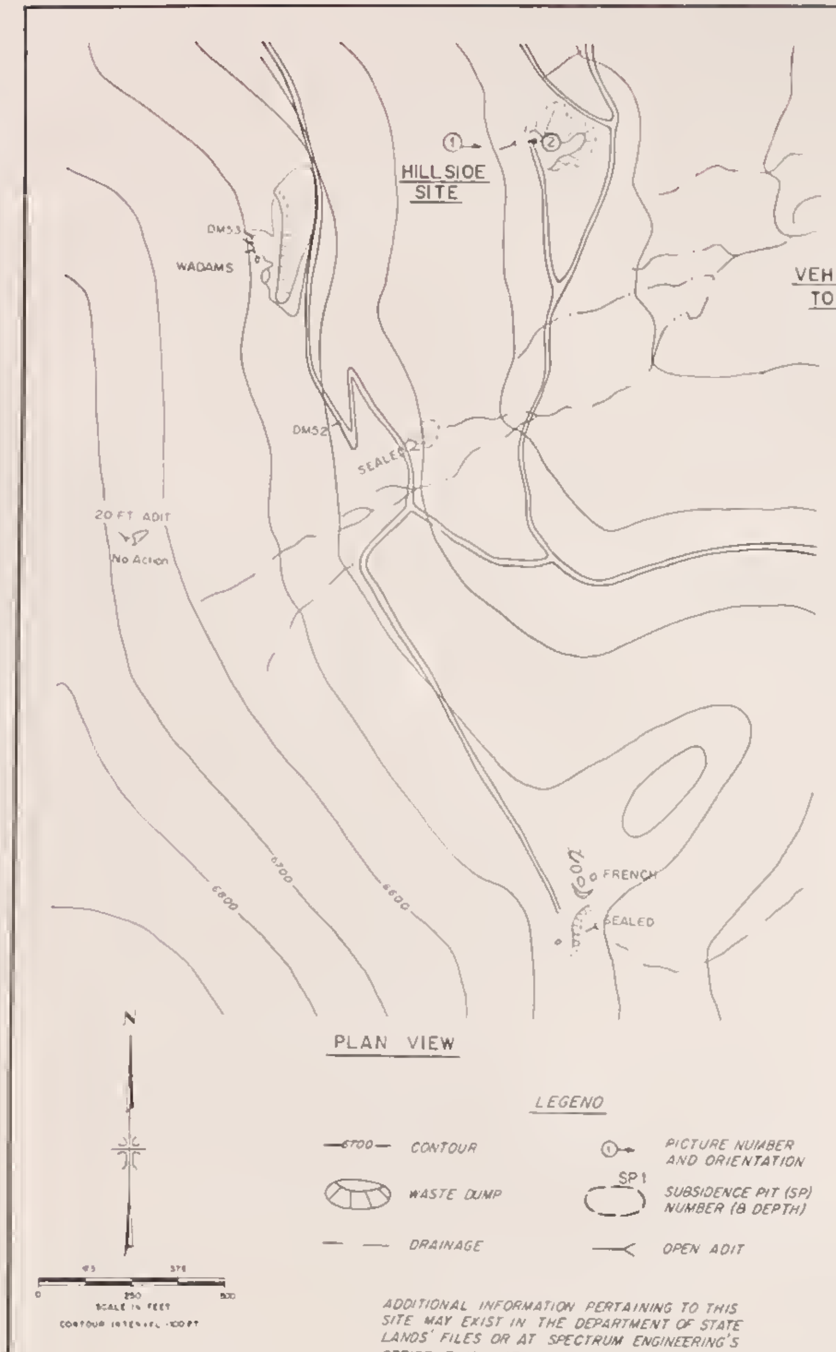
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY: DM

REVISIONS

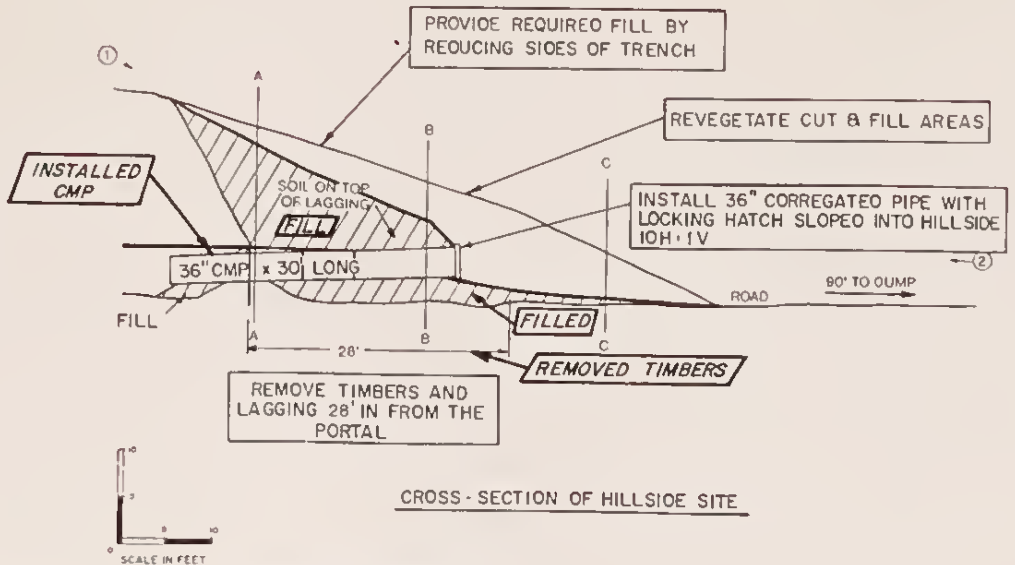
NO	DATE	BY
As Built	April 1992	DLO
2	7/16/91	DLO

SHEET NO 23 of 29

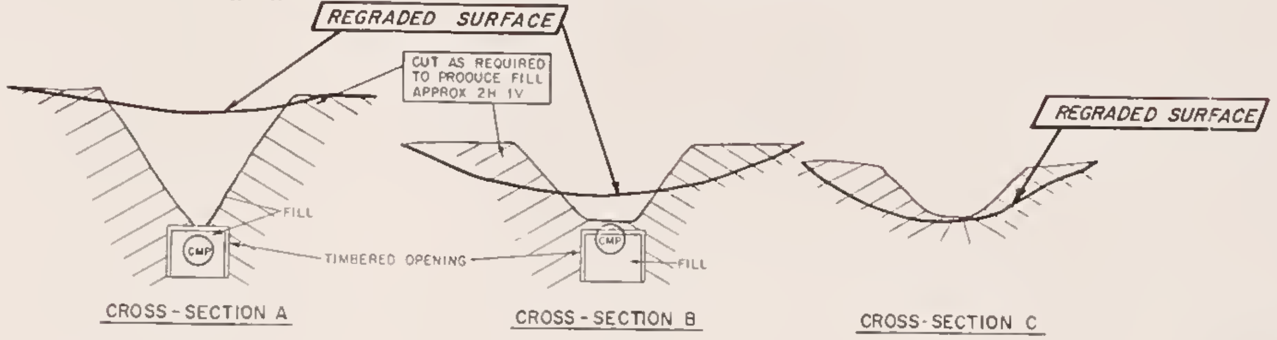


ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

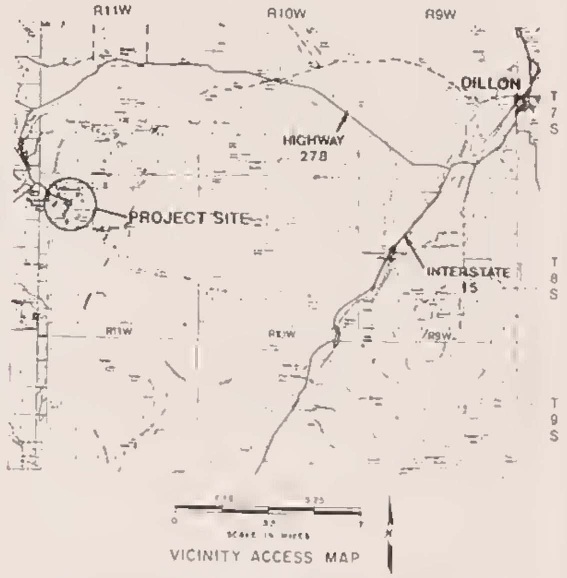
VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.


PROVIOE REQUIRED FILL BY REOUCING SIOES OF TRENCH
REVEGETATE CUT & FILL AREAS
INSTALL 36" CORREGATEO PIPE WITH LOCKING HATCH SLOPEO INTO HILLSIDE 10H : 1V
INSTALLED CMP
SOIL ON TOP OF LAGGING
FILL
36" CMP x 30' LONG
FILL
FILLED
ROAD
90' TO DUMP
REMOVED TIMBERS
28'
REMOVE TIMBERS AND LAGGING 28' IN FROM THE PORTAL
A
B
C
①
②
SCALE IN FEET

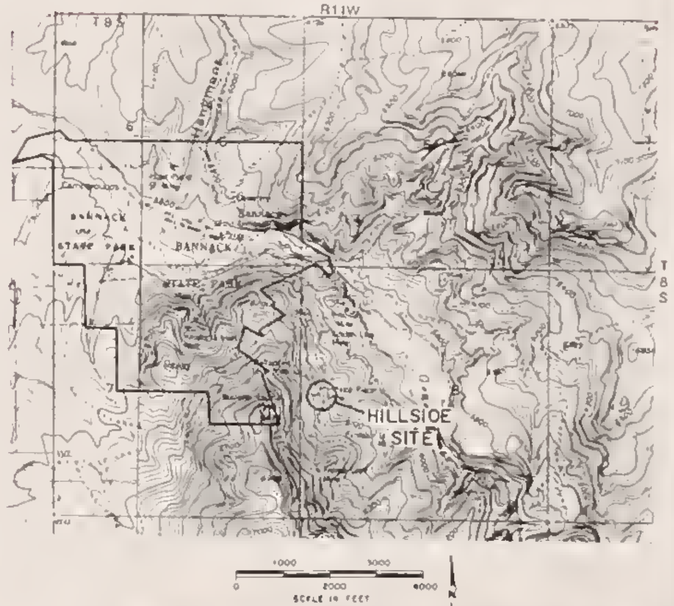
CROSS-SECTION OF HILLSIDE SITE



STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

WORK OESCRIPTION

- REMOVE THE TIMBERS AND LAGGING AND EXCAVATE THE ADIT ENTRANCE TO PERMIT THE INSTALLATION OF A 36 INCH DIAMETER CORREGATED METAL PIPE (CMP) IN THE ADIT.
- INSTALL A 36 INCH DIAMETER, 30 FOOT LONG CMP IN THE ADIT A TOTAL OF 9 FEET OF THE CMP WILL BE INSIDE THE ADIT AND 21 FEET WILL BE OUTSIDE ON A BED OF FILL FILL WILL BE PLACED INSIDE THE ADIT AS FAR AS POSSIBLE. FILL WILL BE PLACE TOTALLY AROUND AND OVER THE EXPOSED CMP. BLEND THE FILL INTO THE EXISTING HILLSIDE. A LOCKING METAL GRATE WILL BE INSTALLED ON THE END OF THE CMP
- REVEGETATE THE BACKFILLEO AREA OVER THE CMP, THE CUT AND FILL AREAS AND ANY OTHER DISTURBED AREAS.

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
CLOSE HILLSIDE ADIT	36' DIAMETER x 30' LONG CMP WITH LOCKING GRATE	INSTALL CMP INTO ADIT OPENING AND BACKFILL AROUND AND OVER CMP FABRICATE LOCKING GRATE FOR THE ENTRANCE.	1 EACH
REVEGETATION OF 0.06 ACRES	FERTILIZER AT 92.5 LBS SEEO AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEEO SPREAD & CRIMP MULCH	5.6 POUND 1.6 LBS PLS T60 POUNDS

① PICTURE 1 LOOKS DOWN AT THE TRENCH & DUMP AT THE HILLSIDE

② PICTURE 2 LOOKS WEST FROM THE DUMP TOWARD THE HILLSIDE PORTAL AREA

NOTICE

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

HILLSIDE

SECTION 8, T 8 S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

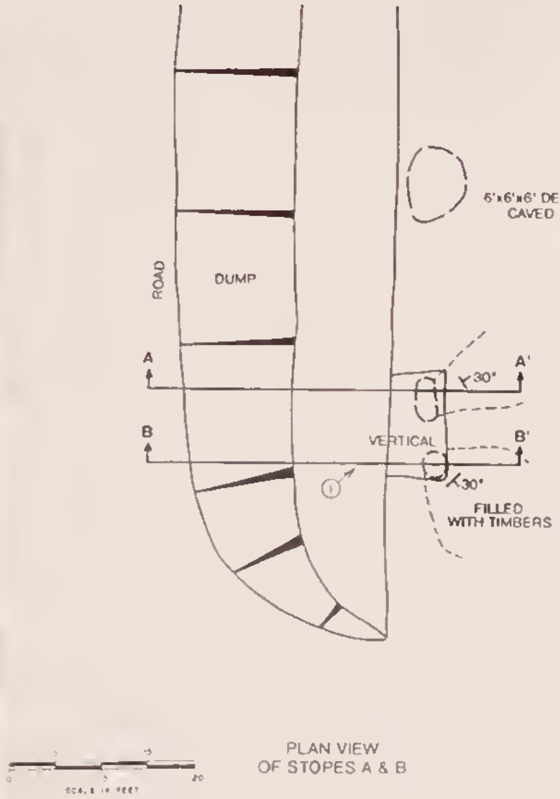
SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY OLO
APPROVED BY DM

REVISIONS NO.	DATE	BY
1	6/20/91	OLO
As-Built	April 1992	OLO

SHEET NO 24 of 29



PLAN VIEW
OF STOPES A & B

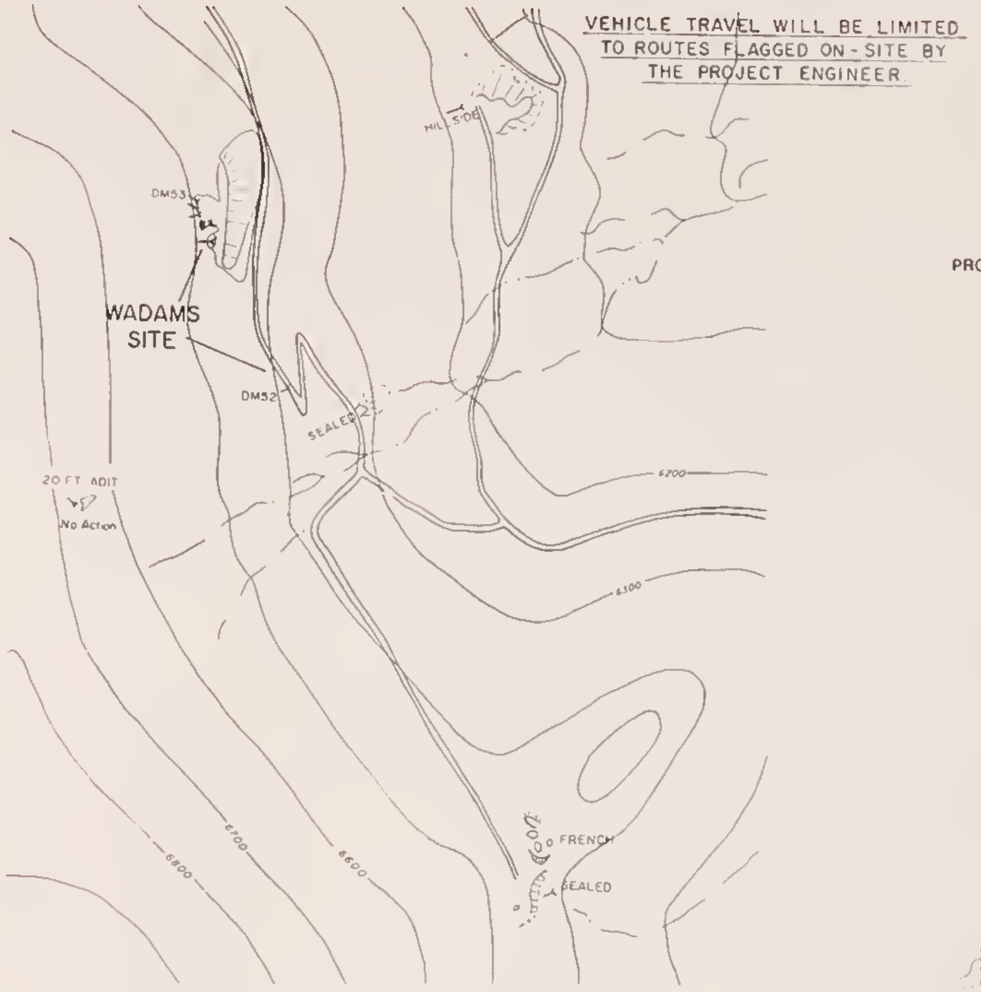
DM 52

① PICTURE 1 SHOWS THE DM 52 PORTAL.

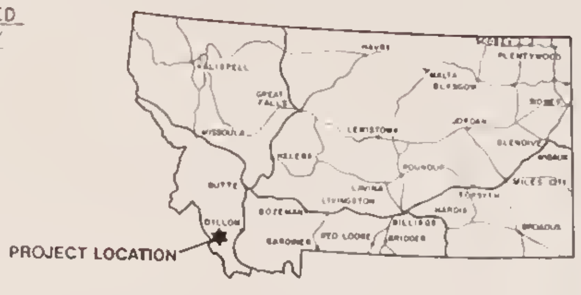
LEGEND

- *—5625— CONTOUR*
- *WASTE DUMP*
- *— — DRAINAGE*
- *①→ PICTURE NUMBER AND ORIENTATION*
- *- - - UNDERGROUND MINE WORKINGS*
- *—< OPEN ADIT*

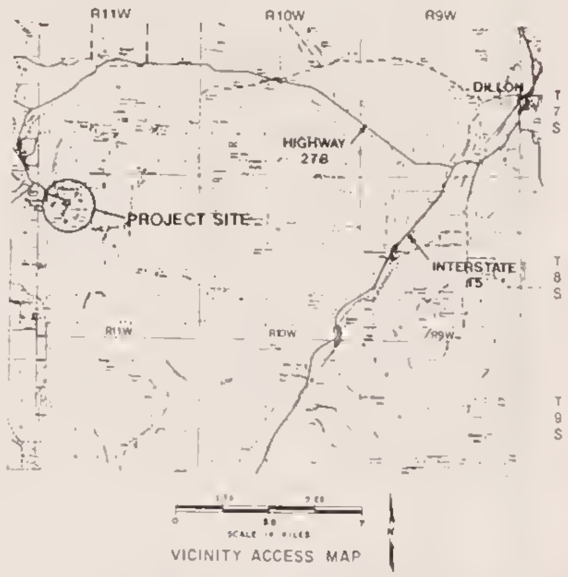
VEHICLE TRAVEL WILL BE LIMITED
TO ROUTES FLAGGED ON-SITE BY
THE PROJECT ENGINEER



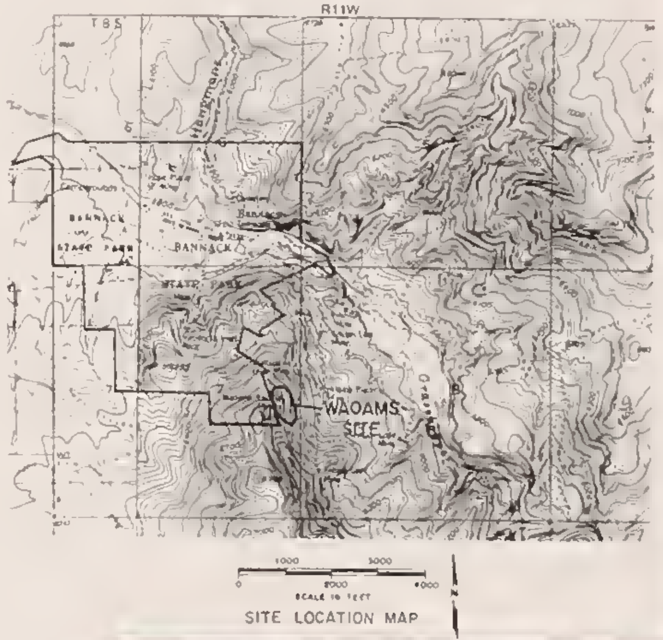
PLAN VIEW



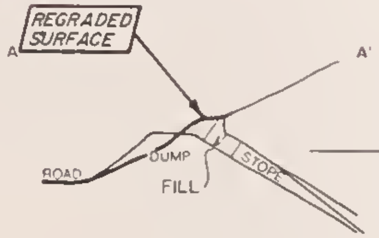
STATE LOCATION MAP



VICINITY ACCESS MAP

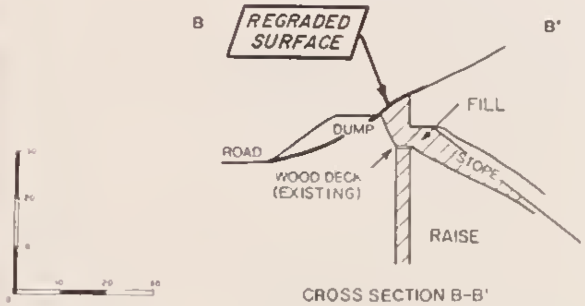


SITE LOCATION MAP



UTILIZE DUMP MATERIAL
ALONG ROAD TO PLUG
STOPES AND RAISE, GRADE
TO BLEND PLUG AND
BORROW AREA WITH TERRAIN
AND REVEGETATE

CROSS SECTION A-A'
OF ROAD, DUMP, & STOPE A



CROSS SECTION B-B'
OF ROAD DUMP, & STOPE B

WORK OESCRIPTION

- WADAMS DM 52 - THIS SITE CONTAINS TWO INCLINED STOPES. THE STOPE DIMENSIONS COULD NOT BE DETERMINED REMOVE THE TIMBERS AND DEBRIS FROM THE OPENINGS EXCAVATE AS NECESSARY TO PREPARE THE OPENINGS FOR BACKFILLING BACKFILL THE STOPES WITH DUMP MATERIAL
- REVEGETATE THE DISTURBED AREA (BACKFILLED AREA AND BORROW AREA)

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
STOPES A & B	UNKNOWN	BACKFILL W/ DUMP MATERIAL	100 CU YDS
REVEGETATION OF 0.04 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

WADAMS
(1 of 2)
SECTION 7, T 8 S, R 11 W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

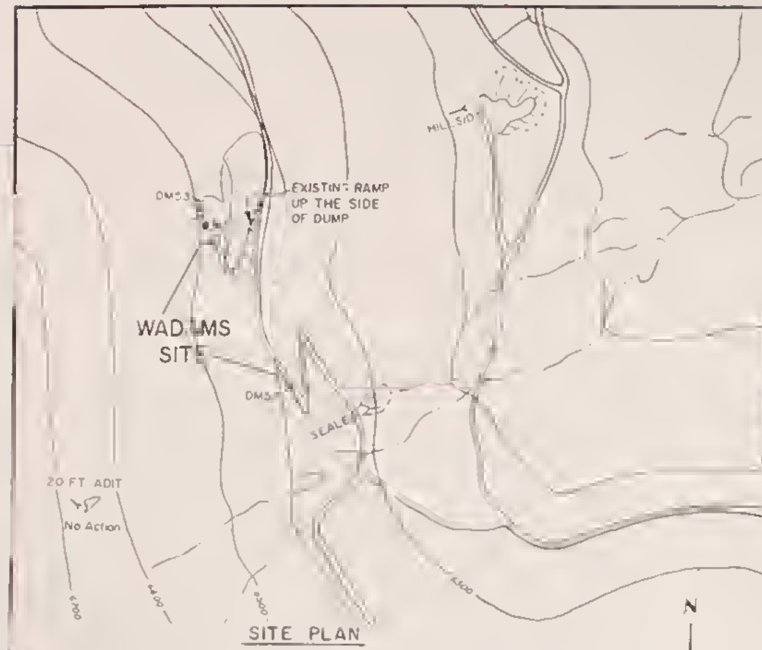
SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY DM

REVISIONS NO	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO

SHEET NO 25 of 29



SITE PLAN

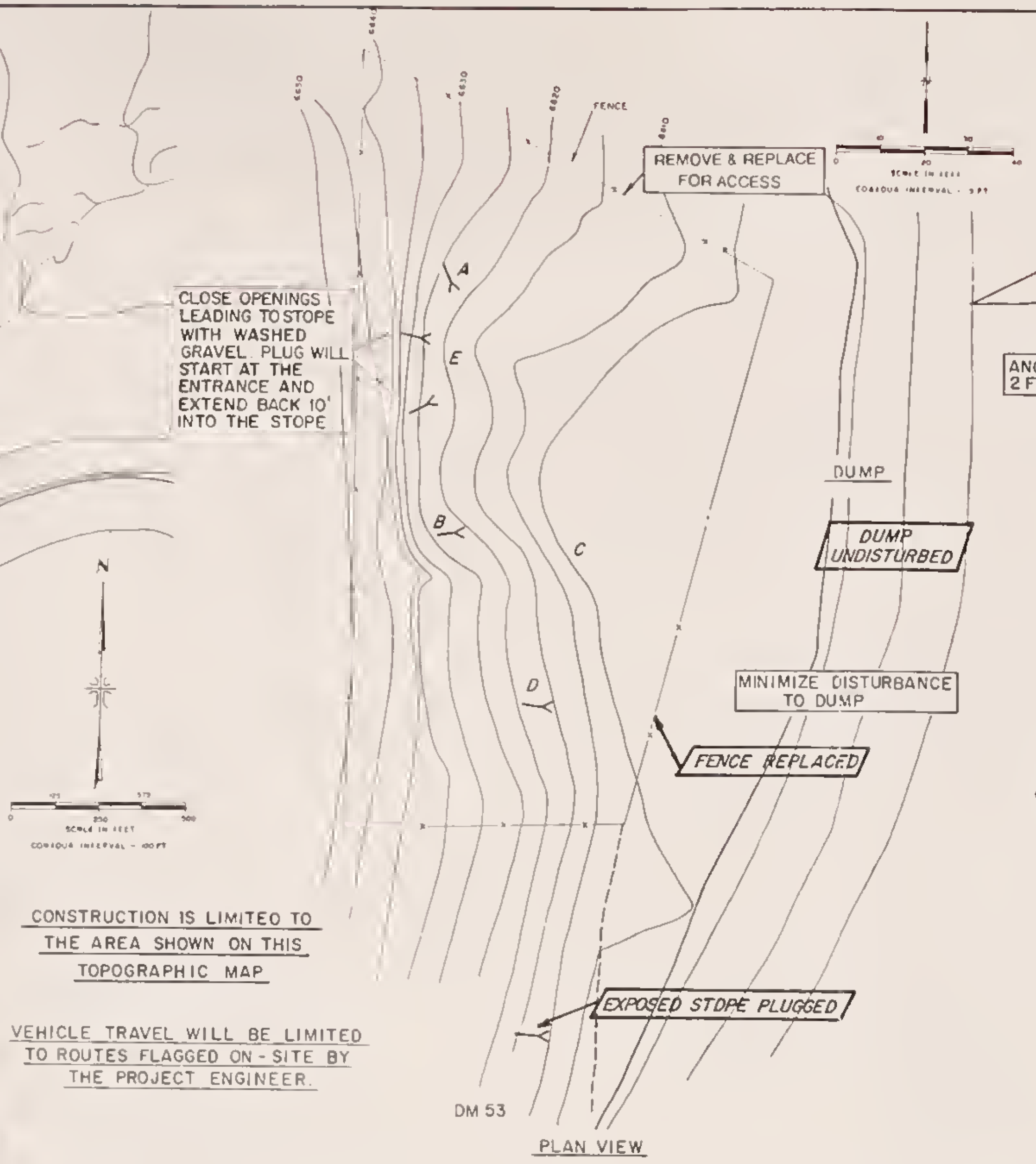
LEGEND

- —5825— *CONTOUR*
- *WASTE DUMP*
- *DRAINAGE*
- ① *PICTURE NUMBER AND ORIENTATION*
- *UNDERGROUND MINE WORKINGS*
- *OPEN ADIT*

① PICTURE 1 IS LOOKING INTO 19' DEEP SHAFT B

② PICTURE 2 IS A VIEW OF THE OPENING ALONG THE HIGHWALL

③ PICTURE 3 IS A VIEW OF 2ND OPENING ALONG THE HIGHWALL


FENCE
REMOVE & REPLACE FOR ACCESS
SCALE IN FEET
CONTOUR INTERVAL - 5 FT
CLOSE OPENINGS LEADING TO STOPE WITH WASHED GRAVEL. PLUG WILL START AT THE ENTRANCE AND EXTEND BACK 10' INTO THE STOPE
A
E
B
C
D
DUMP
DUMP UNDISTURBED
MINIMIZE DISTURBANCE TO DUMP
FENCE REPLACED
EXPOSED STOPE PLUGGED
N
SCALE IN FEET
CONTOUR INTERVAL - 100 FT
DM 53

PLAN VIEW

CONSTRUCTION IS LIMITED TO THE AREA SHOWN ON THIS TOPOGRAPHIC MAP

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
OPENING A	APPROX 10'W x 9'H	INSTALL CURTAIN AND BACKFILL AGAINST THE CURTAIN	25FT x 12FT 110 CU. YDS
OPENING B	APPROX. 15.5'W x 13'H x 30'L	BACKFILL	100 CU. YDS
OPENING C	7'W x 4'H x 17'L	BACKFILL	7 CU YDS
OPENING D	OPEN CUT (SEE DETAIL)	BACKFILL	100 CU. YDS
EXPOSED STOPE	SEE PLAN VIEW	BACKFILL	40 CU YDS
FENCE	EXISTING FARM FENCE	REMOVE AND REPLACE AS NECESSARY FOR EQUIPMENT ACCESS AND MATERIAL MOVEMENT	120 FEET
WATER	ROADS	FOR DUST SUPPRESSION	0 KGAL

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WORK DESCRIPTION

- REMOVE AND REPLACE 120 FEET OF EXISTING FENCE TO PERMIT ACCESS
- OPENING A - FABRICATE AND INSTALL 20 FT BY 12 FT SHEET PILING OVER OPENING BACKFILL OVER CURTAIN. CLOSE 2 OPENINGS BY INSTALLING 40 FOOT LONG WASHED GRAVEL PLUGS IN EACH
- OPENING B - COMPLETELY BACKFILL THE SHAFT WITH WASHED GRAVEL
- OPENING C - COMPLETELY BACKFILL THE INCLINED OPENING WITH WASHED GRAVEL
- OPENING D - COMPLETELY BACKFILL THE OPENING AND CUT AREA IN FRONT OF THE OPENING WITH WASHED GRAVEL
- IMPROVE ACCESS AS NECESSARY FOR EQUIPMENT OPERATION
- NO REVEGETATION AT THIS SITE.

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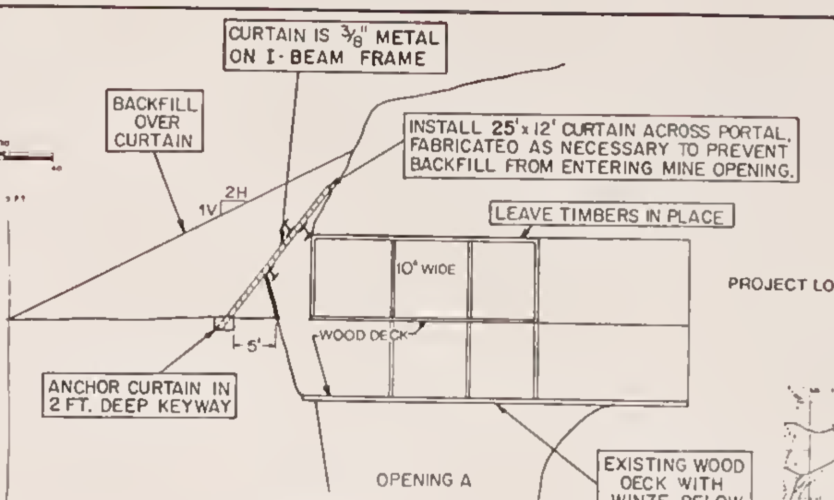
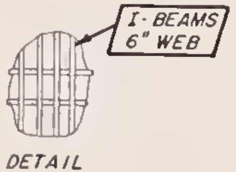
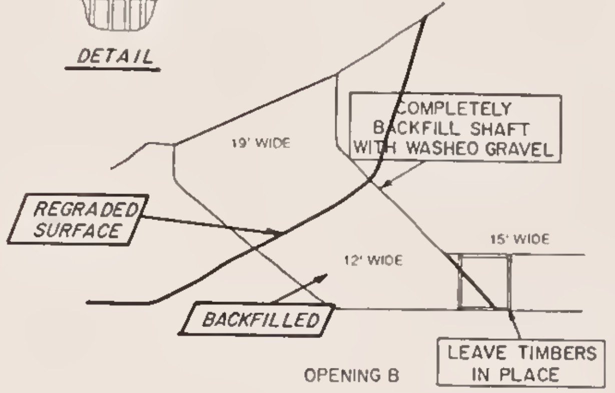

CURTAIN IS 3/8" METAL ON I-BEAM FRAME
BACKFILL OVER CURTAIN
INSTALL 25'x12' CURTAIN ACROSS PORTAL, FABRICATED AS NECESSARY TO PREVENT BACKFILL FROM ENTERING MINE OPENING.
2H
1V
LEAVE TIMBERS IN PLACE
10' WIDE
WOOD DECK
5'
ANCHOR CURTAIN IN 2 FT. DEEP KEYWAY
EXISTING WOOD DECK WITH WINZE BELOW

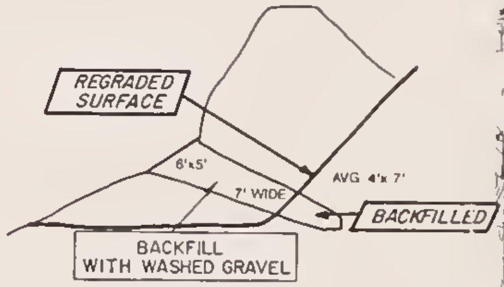
OPENING A



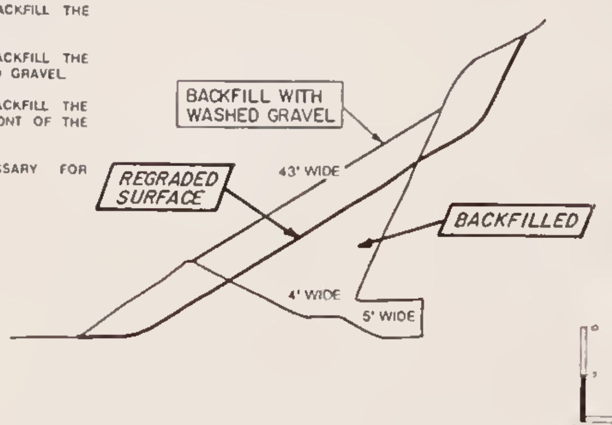
DETAIL



OPENING B

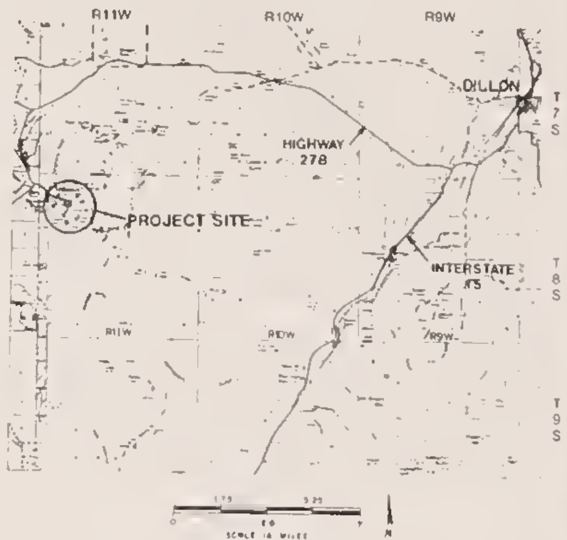


OPENING C

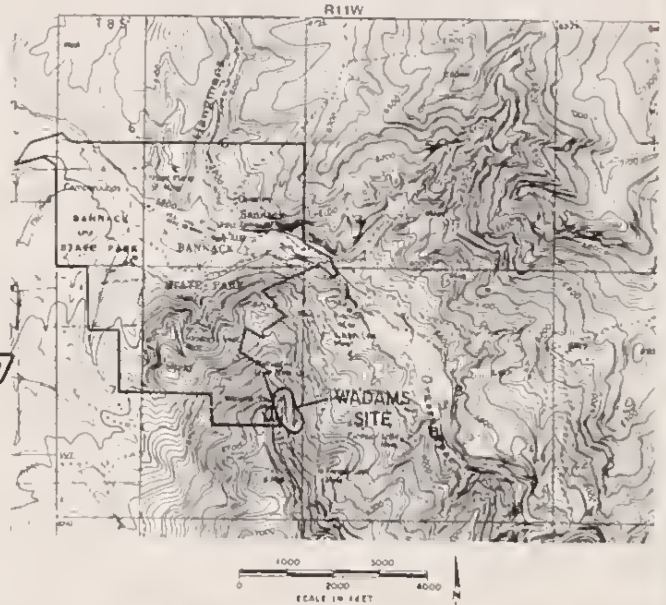


OPENING D

STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

WADAMS
(2 of 2)
SECTION 7, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

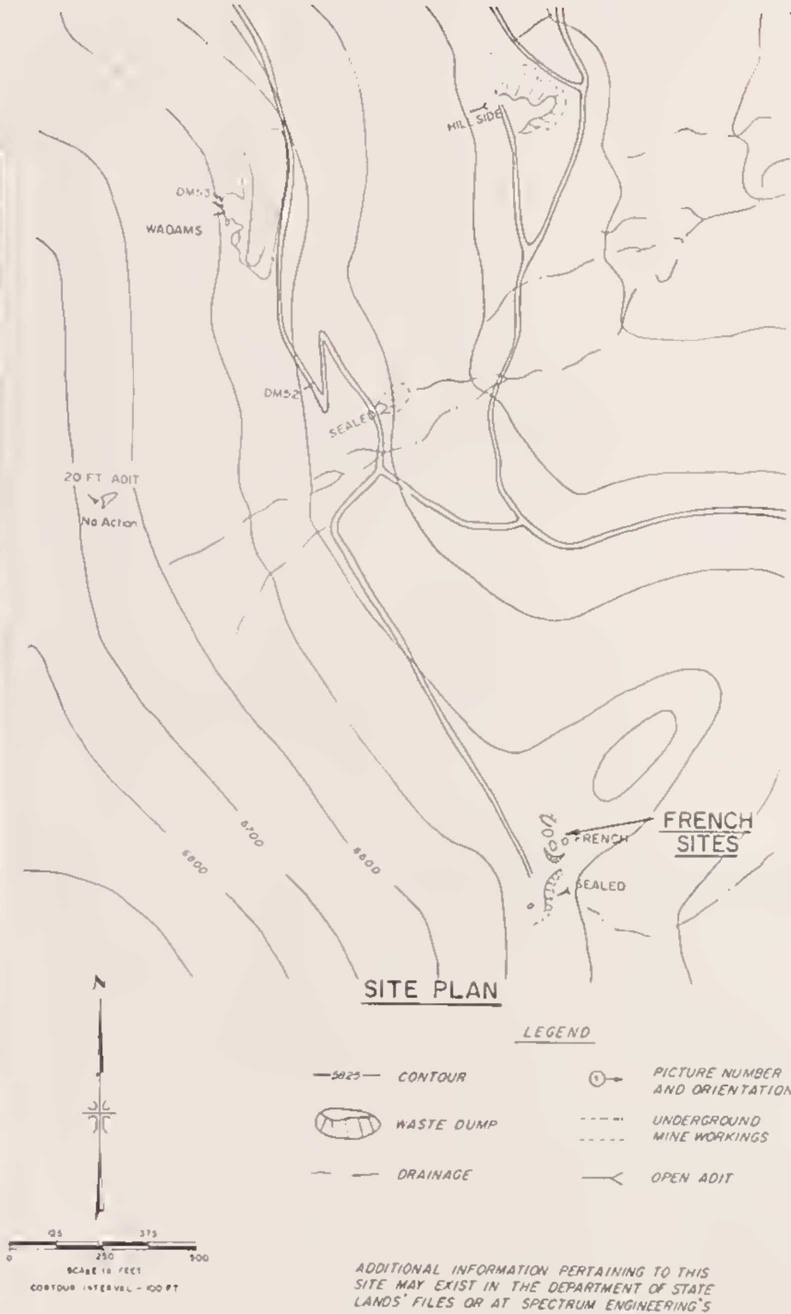
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE: March 1991
DRAWN BY: LNR
APPROVED BY: DM

REVISIONS NO	DATE	BY
1	6/20/91	DLD
As Built	April 1992	DLD

SHEET NO 26 of 29

CONSTRUCTION IS LIMITED TO THE AREA SHOWN ON THIS TOPOGRAPHIC MAP



SITE PLAN

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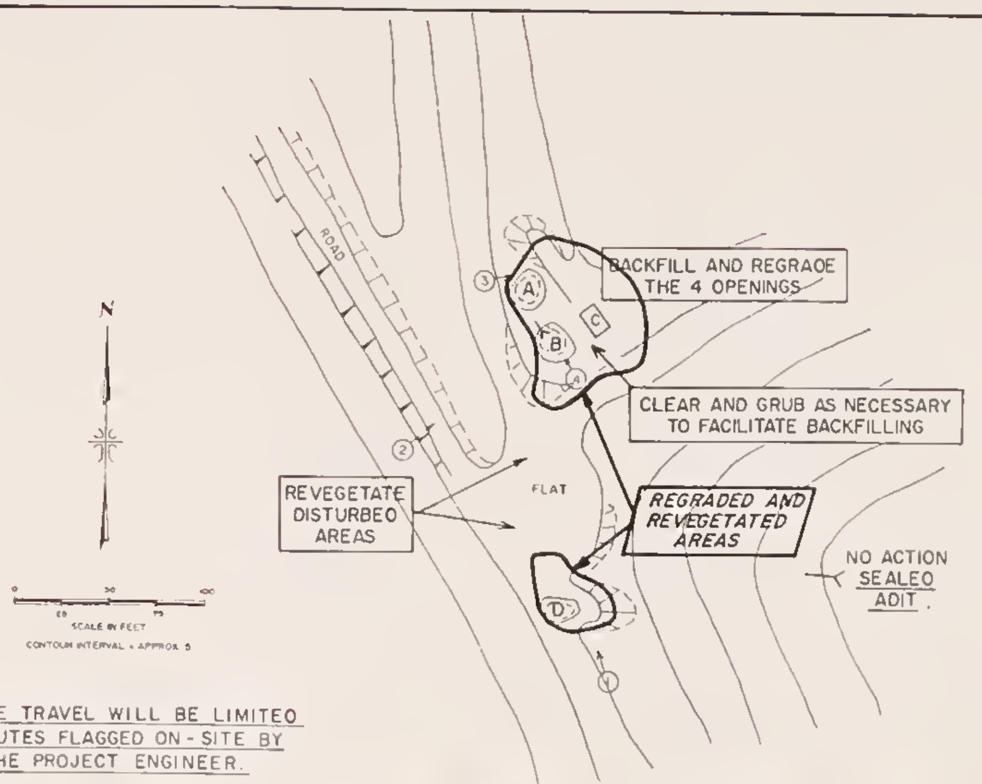

N
SCALE IN FEET
CONTOUR INTERVAL = APPROX 5
ROAD
FLAT
A
B
C
D
BACKFILL AND REGRADE THE 4 OPENINGS
CLEAR AND GRUB AS NECESSARY TO FACILITATE BACKFILLING
REVEGETATE DISTURBED AREAS
REGRADED AND REVEGETATED AREAS
NO ACTION SEALED ADIT

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

PLAN VIEW

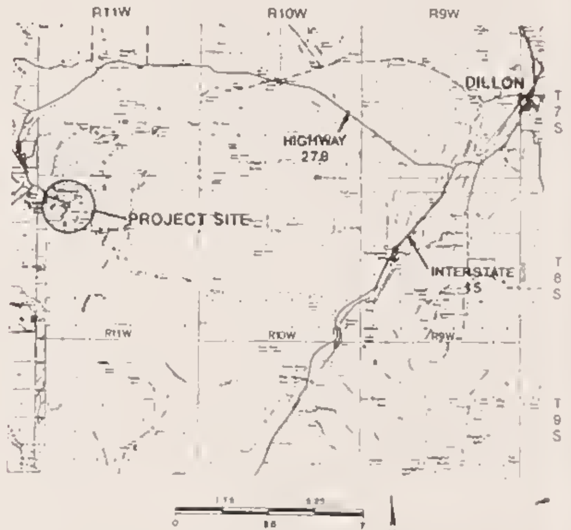
① PICTURE 1 IS LOOKING NORTH ACROSS THE SIDE OPENING D IS IN THE FOREGROUND.

② PICTURE 2 IS A GENERAL VIEW OF A, B, & C LOOKING NE FROM THE ROAD.

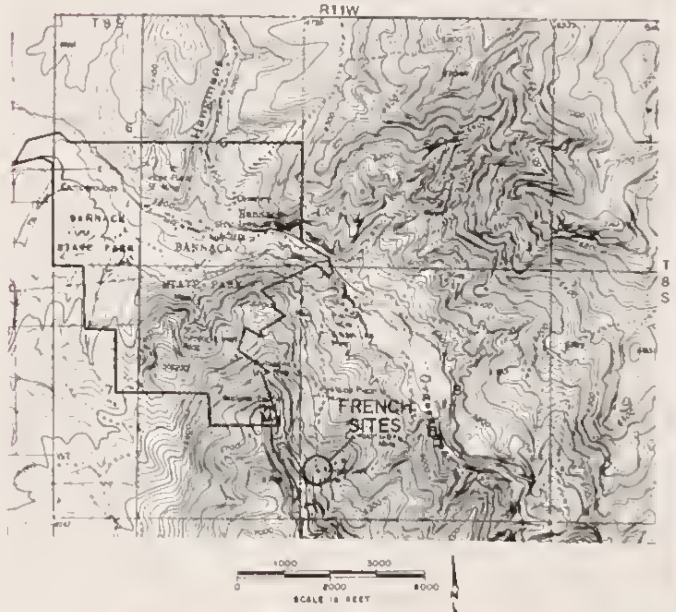
③ PICTURE 3 IS LOOKING EAST AT OPENING A

④ PICTURE 4 IS A VIEW OF THE DEPRESSION AND EXPOSED OPENING AT B

STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
OPENING A	20' x 10' x 6 D	BACKFILL W/ DUMP MATERIAL	45 CU YDS
OPENING B	16 x 19' x 10'D	BACKFILL W/ DUMP MATERIAL	113 CU. YDS
OPENING C	11 x 8' x 15'D	BACKFILL W/ DUMP MATERIAL	49 CU YDS
OPENING D	12 x 15 x 13 D	BACKFILL W/ DUMP MATERIAL	86 CU YDS
WATER	BACKFILL AND ROADS	FOR COMPACTION AND DUST SUPPRESSION	0 KGAL
REVEGETATION OF 0.15 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	

WORK DESCRIPTION

- A, B, C AND D BACKFILL THE SHAFTS AND DEPRESSIONS USING ADJACENT DUMP MATERIAL SOME CLEARING AND GRUBBING WILL BE NECESSARY TO FACILITATE BACKFILLING
- REGRADE AS NECESSARY AND REVEGETATE ALL DISTURBED AREAS

NOTICE

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AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

FRENCH
SECTION 8, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

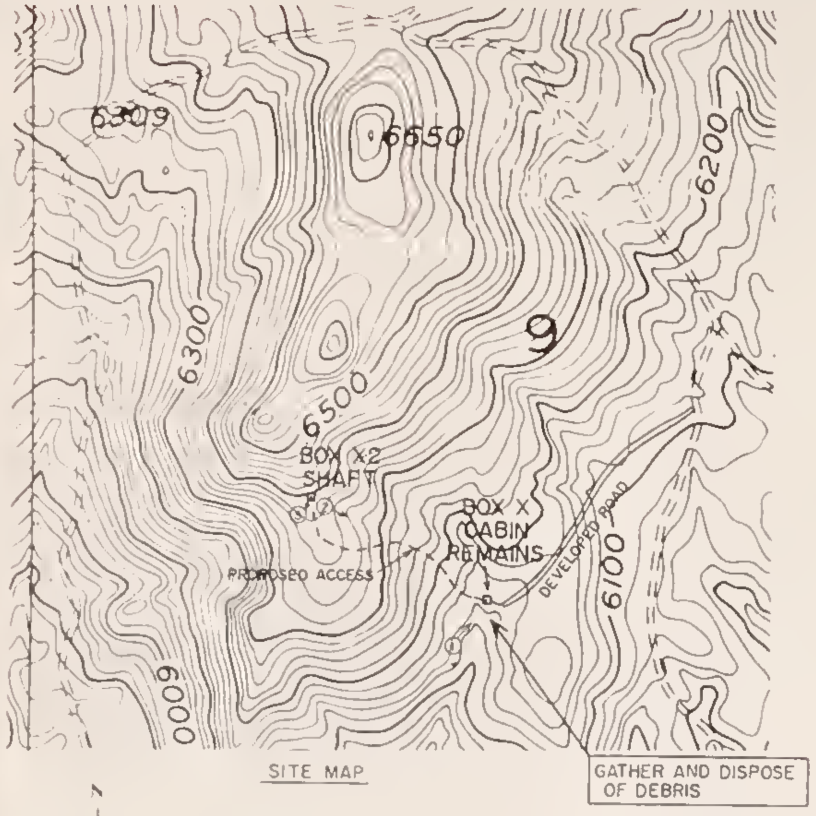
STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

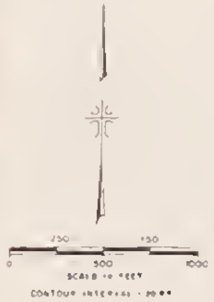
DATE March 1991
DRAWN BY LNR
APPROVED BY DM

REVISIONS NO	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO

SHEET NO 27 of 29



SITE MAP



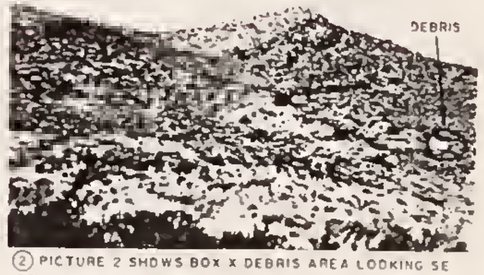
LEGEND

- —5625— *CONTOUR*
- *WASTE DUMP*
- — — *DRAINAGE*
- ①→ *PICTURE NUMBER AND ORIENTATION*
- - - - - *UNDERGROUND MINE WORKINGS*
- —< *OPEN ADIT*

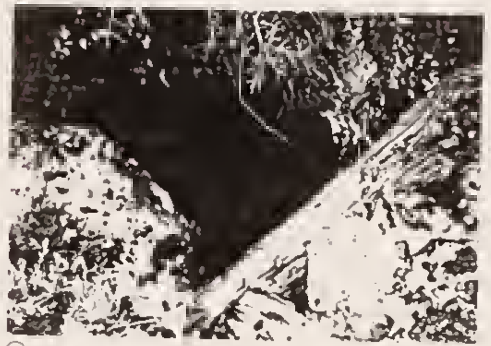
ADDITIONAL INFORMATION PERTAINING TO THIS SITE MAY EXIST IN THE DEPARTMENT OF STATE LANDS' FILES OR AT SPECTRUM ENGINEERING'S OFFICE THIS MATERIAL IS AVAILABLE FOR REVIEW BY ANY INTERESTED PARTY

① PICTURE 1 SHOWS DEBRIS AT THE BOX X SITE DO NOT DISTURB THE STANDING PORTIONS OF THE CABIN RUINS.

DUMPS & BARREN AREA WERE REGRADED AND REVEGETATED.

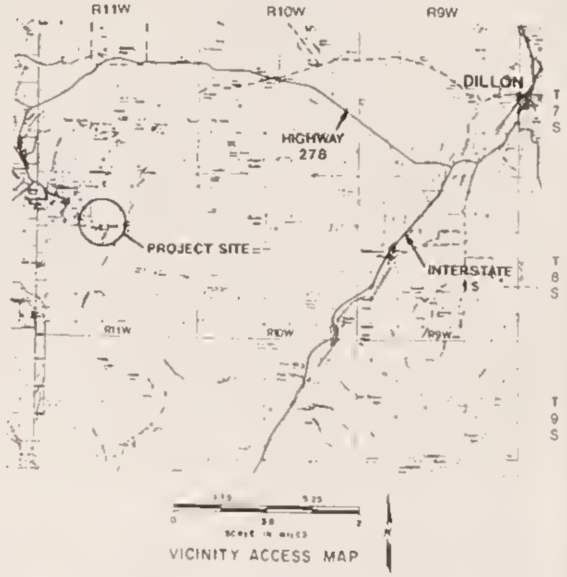


② PICTURE 2 SHOWS BOX X DEBRIS AREA LOOKING SE FROM THE BOX X2 SHAFT.



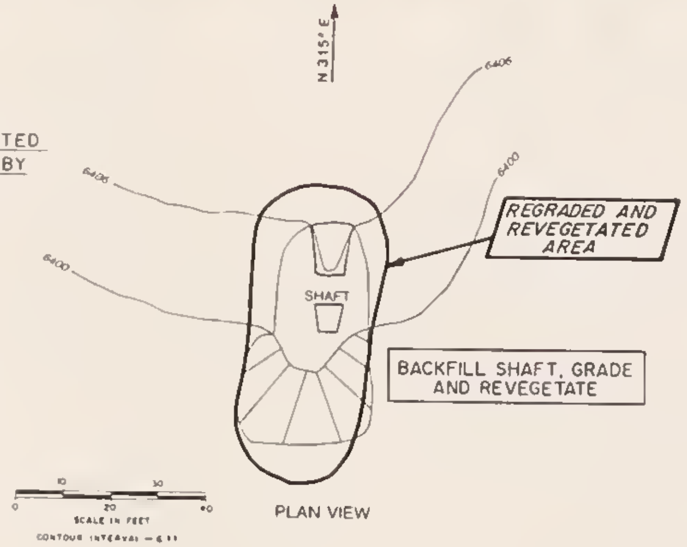
③ PICTURE 3 SHOWS BOX X2 SHAFT COLLAR

STATE LOCATION MAP

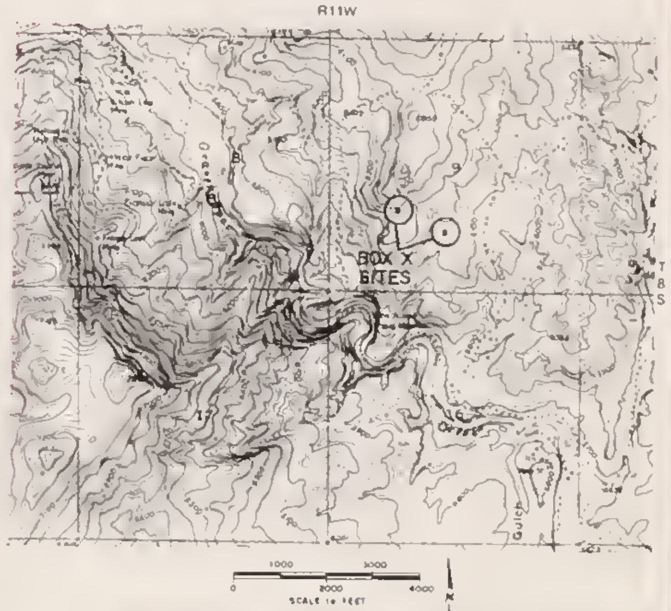


VICINITY ACCESS MAP

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.



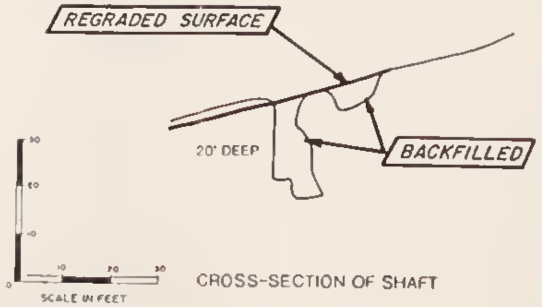
PLAN VIEW



SITE LOCATION MAP

WORK DESCRIPTION

- GATHER AND DISPOSE OF DEBRIS AT THE BOX X SITE ALMOST ALL OF THE DEBRIS IS WOOD
- BACKFILL THE SHAFT AT THE BOX X2 SITE WITH DUMP MATERIAL AND MATERIAL BORROWED FROM AROUND THE COLLAR OF THE SHAFT. REGRADE THE BACKFILLED SHAFT TO BLEND WITH EXISTING TOPOGRAPHY
- REVEGETATE THE DISTURBED AREA AT THE BOX X2 SITE (BACKFILLED SHAFT AND DUMP AREA) AND THE CABIN AND DISTURBED AREA AT THE BOX X SITE.



CROSS-SECTION OF SHAFT

WORK SUMMARY TABLE

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
BOX X2 SHAFT	5' x 10' x 6'D TOP + 6' x 8' x 10'D BOTTOM	BACKFILL W/ DUMP MATERIAL	29 CU. YDS
DEBRIS REMOVAL	BOX X SITE	REMOVE AND DISPOSE	3 PICKUP LOADS
WATER	ROADS	DUST SUPPRESSION	0 KGAL
REVEGETATION OF 0.18 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	18.5 POUNDS 5.2 LBS PLS 600 POUNDS

NOTICE

AN ABANDONED MINE UNDERLIES THIS SITE MANY POTENTIAL HAZARDS EXIST. THE EXTENT OF THESE HAZARDS IS NOT FULLY KNOWN CONTRACTORS AND OTHER PERSONS WORKING AT THE SITE SHALL APPRISE THEMSELVES OF THE CONDITIONS AND TAKE WHATEVER STEPS ARE DEEMED NECESSARY TO INSURE SAFETY WHILE PERFORMING THEIR DUTIES

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT.

BOX X
SECTION 9, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

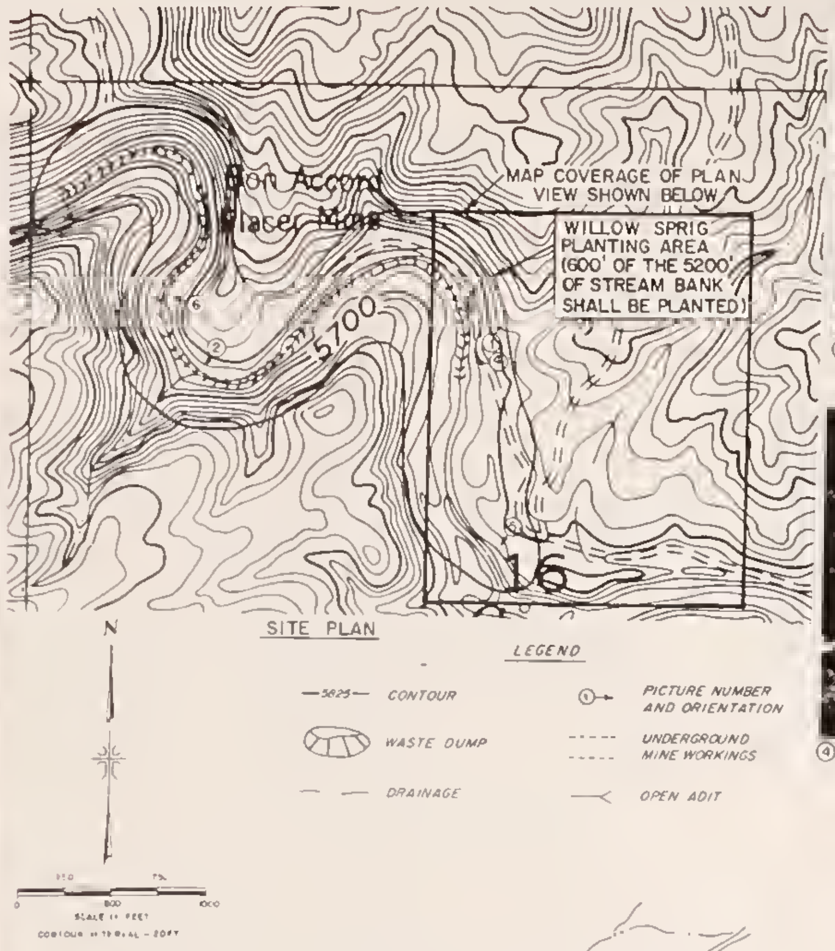
SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: LNR
APPROVED BY DM

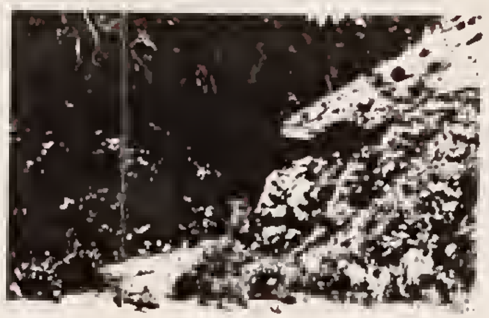
REVISIONS

NO	DATE	BY
As Built	April 1992	DLO
2	7/16/91	DLO

SHEET NO 28 of 29


Bon Accord Placer Mine
MAP COVERAGE OF PLAN VIEW SHOWN BELOW
WILLOW SPRIG PLANTING AREA (600' OF THE 5200' OF STREAM BANK SHALL BE PLANTED)
5700
16
SITE PLAN
N
LEGEND
5825 CONTOUR
WASTE DUMP
DRAINAGE
PICTURE NUMBER AND ORIENTATION
UNDERGROUND MINE WORKINGS
OPEN ADIT
SCALE IN FEET
CONTOUR INTERVAL = 20FT

① PICTURE 1 IS A VIEW OF THE MINE OPENING LOOKING NE FROM DRAGLINE SPOILS



② PICTURE 2 SHOWS THE DEGREE TO WHICH MINING HAS LOWERED THE CREEK CHANNEL

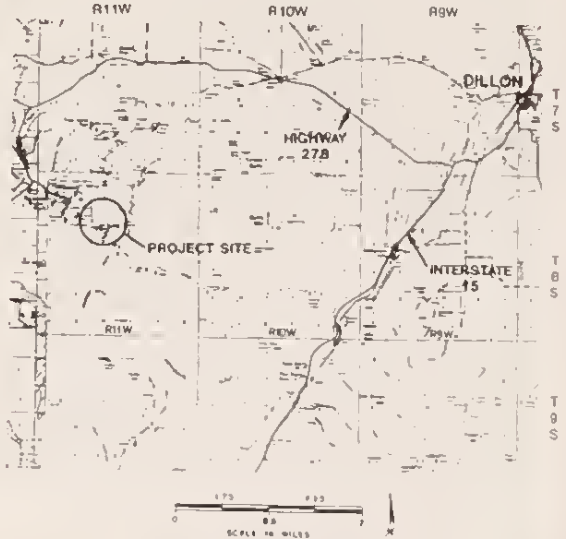
③ PICTURE 3 SHOWS THE NATURAL BANK THAT HAS BEEN EXPLORED FOR GOLD PLACER

④ PICTURE 4 SHOWS ERODING DRAGLINE SPOILS

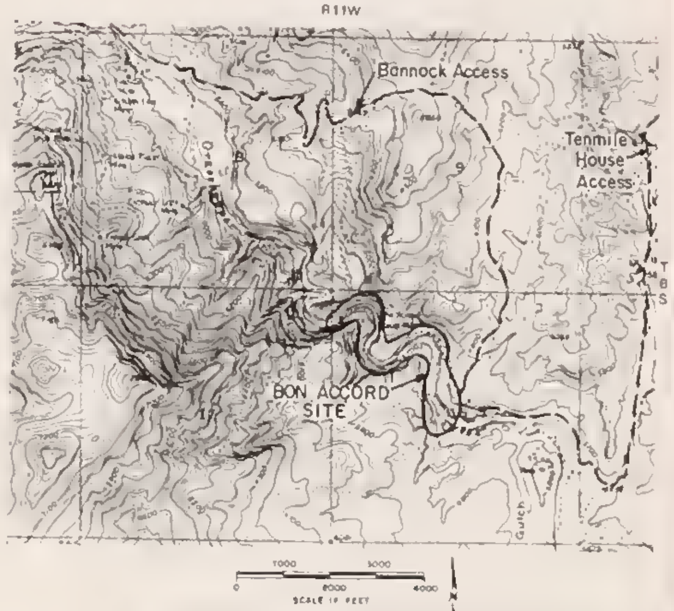
⑤ PICTURE 5 SHOWS ERODING DRAGLINE SPOILS.

⑥ PICTURE 6 SHOWS ERODING DRAGLINE SPOILS.

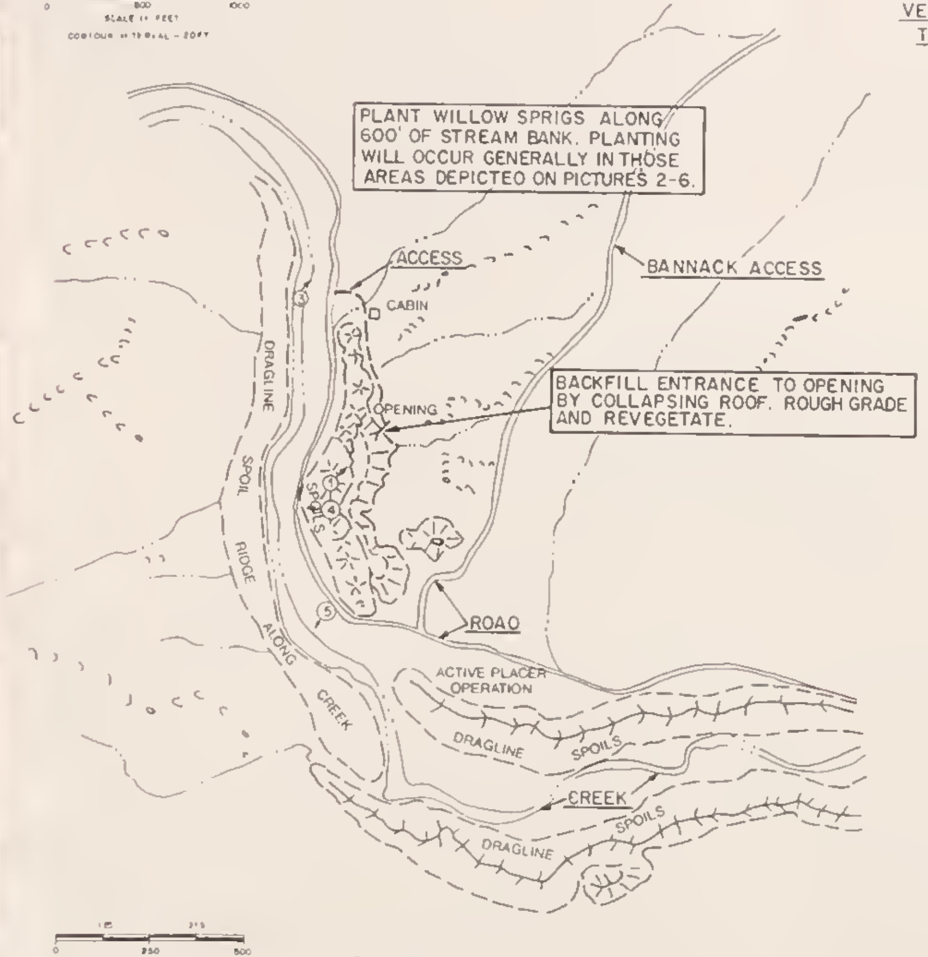
STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP


PLANT WILLOW SPRIGS ALONG 600' OF STREAM BANK. PLANTING WILL OCCUR GENERALLY IN THOSE AREAS DEPICTED ON PICTURES 2-6.
ACCESS
BANNACK ACCESS
CABIN
BACKFILL ENTRANCE TO OPENING BY COLLAPSING ROOF. ROUGH GRADE AND REVEGETATE.
OPENING
DRAGLINE
SPOIL RIDGE ALONG CREEK
SPOILS
ROAD
ACTIVE PLACER OPERATION
DRAGLINE SPOILS
CREEK
DRAGLINE SPOILS
SCALE IN FEET

PLAN VIEW

VEHICLE TRAVEL WILL BE LIMITED TO ROUTES FLAGGED ON-SITE BY THE PROJECT ENGINEER.

NO ACTION
LANDOWNER WITHDREW CONSENT

WORK DESCRIPTION

- BACKFILL THE ENTRANCE TO THE INCLINED OPENING BY COLLAPSING THE ROOF. REGRADE THE AREA AND REVEGETATE.
- PLANT WILLOW SPRIGS ALONG 600 FEET OF THE STREAM BANK. PLANTING WILL OCCUR IN THOSE AREAS WHERE WILLOWS ARE NON-EXISTENT OR VERY SPARSE ALONG A 5200 FOOT STRETCH OF STREAM BANK. APPROXIMATELY ONLY 600 OF THE 5200 FEET OF BANK WILL REQUIRE PLANTING.

WORK SUMMARY TABLE

NO ACTION

ITEM	DESCRIPTION	ACTION	ESTIMATED QUANTITY
INCLINE OPENING	APPROX. 5' x 5' x 30'L	COLLAPSE ROOF AND BACKFILL ANY REMAINING HOLES.	28 CU. YDS
WILLOWS	600 FEET OF STREAM BANK ALONG A 5200 FOOT STRETCH	PROVIDE AND PLANT WILLOWS ALONG THE STREAM BANK AS DIRECTED BY THE ENGINEER	600 WILLOWS SPRIGS
REVEGETATION OF 0.02 ACRES	FERTILIZER AT 92.5 LBS SEED AT 26.0 LBS PLS STRAW MULCH AT 3,000 LBS	APPLY FERTILIZER BROADCAST SEED SPREAD & CRIMP MULCH	2 POUNDS 0.6 LBS PLS 60 POUNDS

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NOTICE

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AS-BUILT DRAWING

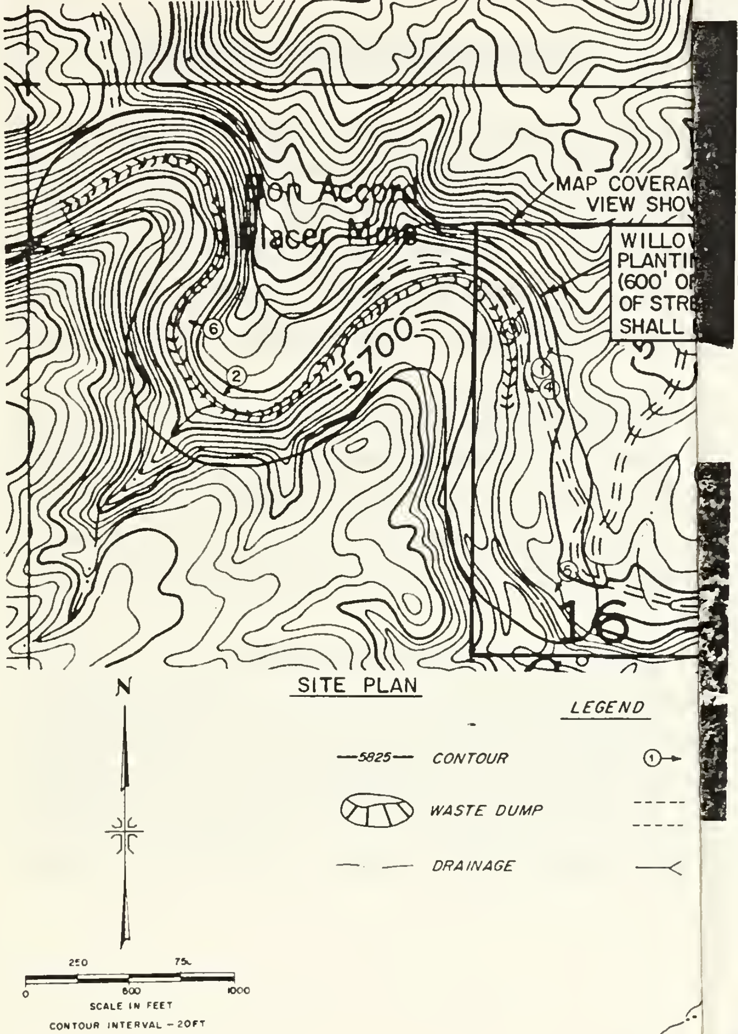
SITE PLAN AND GENERAL LAYOUT

BON ACCORD
SECTION 16, T8S, R11W
BEAVERHEAD COUNTY, MONTANA

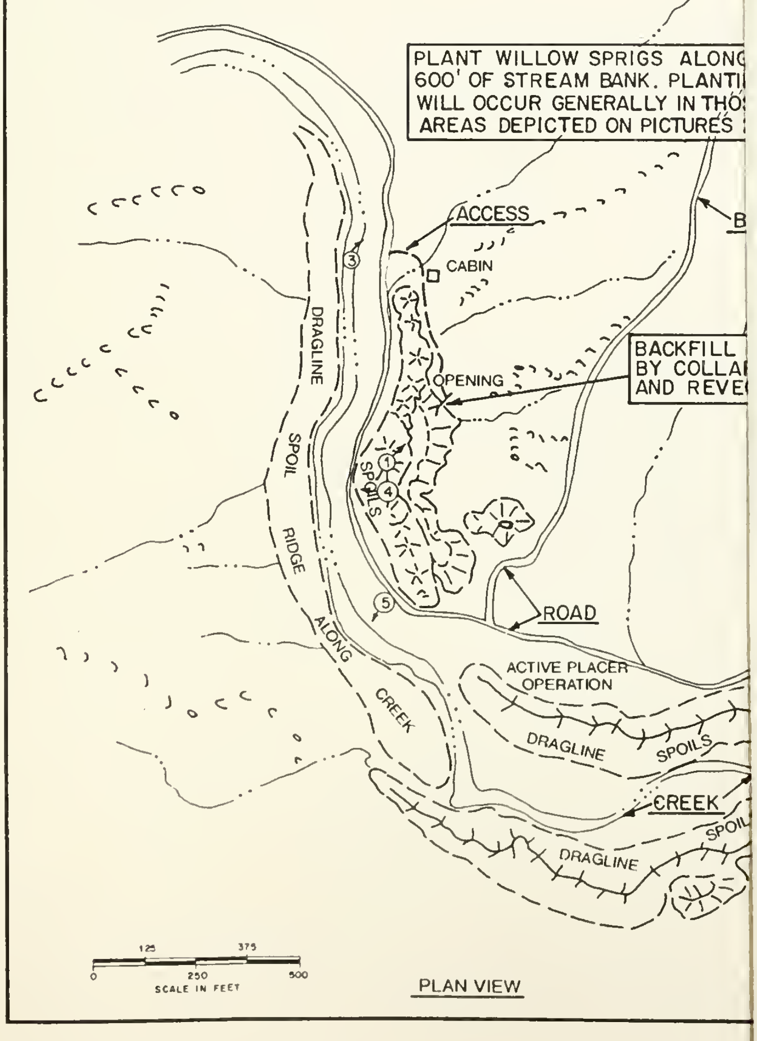
STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

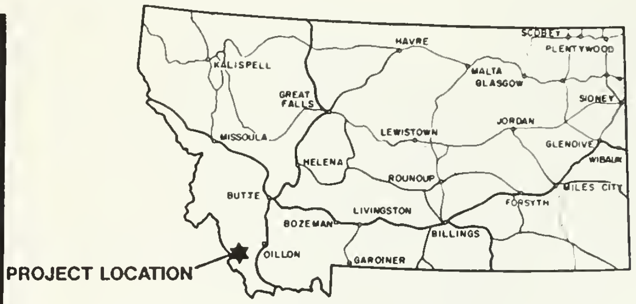
DATE	March 1991	
DRAWN BY:	DLO	
APPROVED BY	DM	
REVISIONS		
NO	DATE	BY
1	6/20/91	DLO
As-Built	April 1992	DLO
SHEET NO 29 of 29		



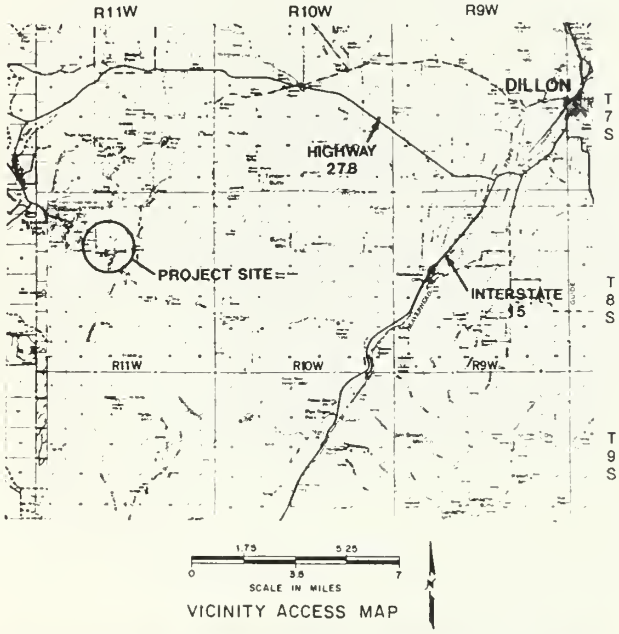
SITE PLAN



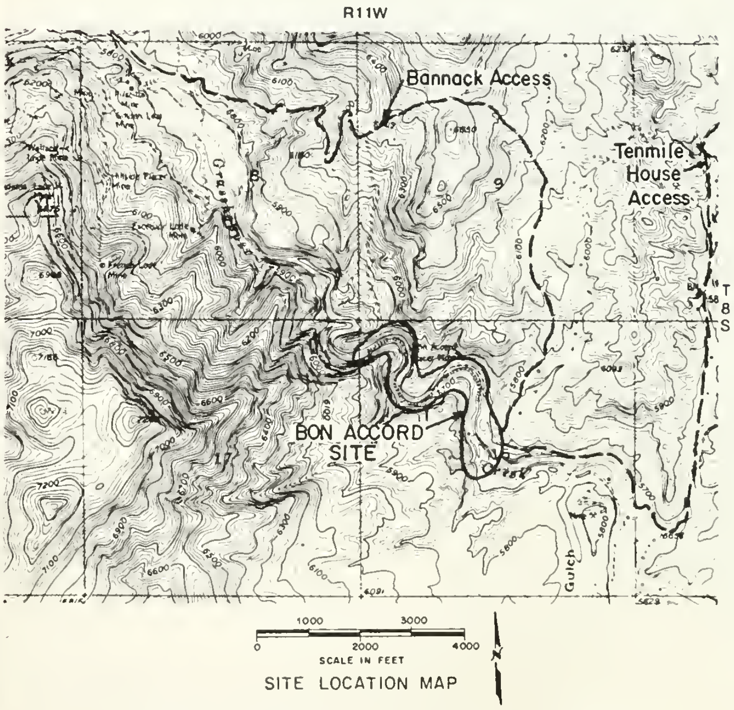
PLAN VIEW



STATE LOCATION MAP



VICINITY ACCESS MAP



SITE LOCATION MAP

AS-BUILT DRAWING

SITE PLAN AND GENERAL LAYOUT

BON ACCORD

SECTION 16, T 8 S, R 11W
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

DATE March 1991
DRAWN BY: OLO
APPROVED BY OM

REVISIONS NO	DATE	BY
1	6/20/91	OLO
As-Built	April 1992	OLO

SHEET NO. 29 of 29

7. COMMENTS/SUGGESTIONS

A number of sites within the project area had been fenced during previous projects. Due to the proximity of the State Park and the probability of visitation, we upgraded these closures where possible. We believe fences only marginally decrease the potential for humans access. The possibility of an accident is only one of the problems we are trying to address. All accessible mine openings might have to be searched if a lost person were reported in this area.

Between the site inventory and construction, limited mining activity continued in the areas around the Golden Leaf Mine and the Hand Placer. These activities exposed additional shallow openings. Should mining or exploration activities continue in the general area, it is likely that other underground openings will be exposed. Openings that were exposed by recent mining activities were not included in the project.

The Bannack Mining District Project was hindered by the lack of positive support from the principal landowners and\or claimants. In general, they saw our efforts as an impediment to their goals of developing and marketing their properties. This kept the project from moving ahead at the desired pace and ultimately necessitated substantial design revisions. In the end, we couldn't do everything in the most cost effective way; but, we did substantially achieve the project goals.

8. PHOTOGRAPHS/SLIDES

8.1 Photo/Slide Description Listing

Assigned Number	Date Taken	Subject or Comments
Contractor's Equipment		
1	10-21-91	John Deere 490D Backhoe
2	04-07-92	John Deere JD755 Track Loader
3	04-09-92	Case 580 Loader-Tractor-Backhoe
4	03-30-92	Crimper
5	03-23-92	Terex TS14 Scraper
6	03-23-92	Water Truck
7	03-23-92	4 yd Dump Truck and Trailer
8	11-11-91	Welding and Cutting Equipment
Hand Placer Site		
9	02-02-91	Looking west at DM 1 & DM 2
10	02-02-91	Looking west at DM 2, 3 & 4
11	10-16-91	Pre-construction DM 1
12	03-23-92	DM 1 backfilled and graded
13	04-02-92	DM 1 seeded and mulched
14	10-16-91	Pre-construction DM 2
15	03-23-92	DM 1 & DM 2 backfilled and graded
16	04-02-92	DM 2 seeded and mulched
17	10-21-91	Pre-construction DM 3
18	03-23-92	DM 3 backfilled
19	03-23-92	Looking up at the closed adit DM 3
20	04-02-92	DM 3 completed
21	10-21-91	Pre-construction DM 4

Assigned Number	Date Taken	Subject or Comments
22	10-23-91	Shovels at DM 4 prior to hand backfilling
23	10-18-91	Pre-construction DM 17 A&B
24	10-23-92	Backfilling at DM 17 A&B
25	30-29-92	Mulch spread on DM 17 A&B
26	03-10-91	Pre-construction DM 17 D
27	04-02-92	DM 17 D backfilled and graded
28	04-09-92	Mulch spread on DM 17 D
29	03-29-92	Pre-construction DM 17 E
30	04-02-92	DM 17 E backfilled and graded
31	04-09-92	DM 17 E completed
32	10-16-91	Pre-construction Hand Incline Added
33	04-30-92	Filling Hand Incline below DM 2
34	04-30-92	Grading the Hand Incline
35	04-30-92	Hand Incline revegetated

Southwest Section 5 Site

36	10-16-91	Pre-construction DM 5
37	10-21-91	Moving 490D up to DM 5
38	10-21-91	DM 5 after backfilling and seeding
39	10-21-91	Pre-construction DM 6
40	10-21-91	490D filling opening DM 6
41	10-21-91	Complete except for seed DM 6
42	10-21-91	Pre-construction DM 7
43	10-21-91	DM -7 regraded prior to seeding
44	10-21-91	Pre-construction DM 8A
45	10-21-91	Pre-construction DM 8B
46	10-21-91	Pre-construction DM 8C

Assigned Number	Date Taken	Subject or Comments
47	10-21-91	DM 8A backfilled
48	10-21-91	Backfilling with Excavator at DM 8B
49	10-21-91	DM 8C plugged and graded
50	10-21-91	DM 8 site regraded and seeded
51	10-21-91	Pre-construction DM 9
52	10-22-91	Backfilling DM 9 with Excavator
53	10-21-91	DM 9 completed
54	10-22-91	DM 10 prior to construction
55	10-22-91	DM 10 backfilling completed
56	10-22-91	DM 11 starting to fill openings with dump material
57	10-22-91	DM 11 openings filled and regraded
58	10-22-91	DM 11 seeded and mulched
59	10-22-91	Pre-construction DM 12
60	10-23-91	Plugging entrance at DM 12
61	10-22-91	DM 12 with left drift plugged
62	10-23-91	DM 12 mulching the area disturbed by construction
63	10-22-91	Pre-construction DM 13
64	10-23-91	DM 13 completed
65	10-21-91	Pre-construction DM 14
66	10-21-91	View of cabin and dump at DM 14
67	10-18-91	Entrance at DM 14 prepared for plug
68	10-18-91	Track loader plugging DM 14
69	10-22-91	DM 14 with trench filled and graded
70	10-22-91	Crimping mulch at DM 14

Assigned Number	Date Taken	Subject or Comments
East Half Section 5 Site		
71	10-16-91	Pre-construction DM 15
72	10-16-91	DM 15 completed
73	10-16-91	Pre-construction DM 16
74	10-16-91	Pre-construction DM 16
75	10-15-91	Mixing mortar for DM 16
76	04-15-92	DM 16 with rock wall installed
77	10-18-91	DM 19 pre-construction
78	10-22-91	DM 19 graded area seeded and fertilized
79	10-24-91	DM 19 mulched
Bluegrass Site		
80	10-18-91	Overall site pre-construction
81	10-18-91	Overall site pre-construction
82	10-18-91	DM 25 pre-construction
83	10-22-91	Backfilling DM 25
84	10-22-91	DM 25 complete except for seed, fert. & mulch
85	10-24-91	Complete DM 25
86	10-18-91	Pre-construction DM 26
87	10-22-91	Backfilling DM 26
88	10-18-91	Pre-construction DM 27
89	10-18-91	Pre-construction DM 28
90	10-18-91	Pre-construction DM 30
91	10-25-91	DM 27 & 28 complete; DM 30 filled
92	03-08-91	DM 29 pre-construction
93	10-24-91	Backfilling DM 29
94	10-25-91	DM 29 completed

Assigned Number	Date Taken	Subject or Comments
95	10-18-91	Shaft #1 pre-construction
96	10-18-91	Shaft #2 pre-construction
97	10-18-91	Shaft #3 pre-construction
98	10-18-91	Shaft # 4 pre-construction
99	10-18-91	Shaft #5 pre-construction
100	10-18-91	Depression A pre-construction
101	10-18-91	Depression B pre-construction
102	10-18-91	Depression C pre-construction
103	10-18-91	Depression D pre-construction
104	10-18-91	Depression E pre-construction
105	10-18-91	Depression F pre-construction
106	10-24-91	Working around Depression B
107	10-24-91	Depression A backfilling
108	10-22-91	Filling and grading Shaft #4
109	10-23-91	Loader and excavator working
110	10-25-91	Borrowing above Depression B
111	03-31-92	Depression C, D, & E adjusting slopes
112	03-31-92	Mulching in progress around Shafts 4 & 5
113	03-31-92	Seeding Blue Grass
114	03-31-92	Using crimper attached to excavator bucket
115	03-31-92	Crimped mulch on Depressions A & B and borrow
116	04-02-92	Blue Grass complete
117	10-25-91	Shaft 5 mulched
118	10-18-91	Shaft 6 pre-construction
119	03-23-92	Shaft 6 backfilled and graded
120	03-23-92	Looking up the drainage at Shaft 6 grading
121	03-31-92	Shaft 6 completed

Assigned Number	Date Taken	Subject or Comments
122	03-31-92	Shaft located during construction
123	04-09-92	Access to new shaft
124	04-09-92	Backfilling new Bluegrass shaft
125	04-09-92	Bluegrass shaft backfilled
126	04-09-92	Borrow area for new Bluegrass shaft
127	04-10-92	New Bluegrass shaft & access revegetated
Gold Bug Site		
128	03-10-91	Openings above road on east side of ridge
129	03-10-91	Openings above road on east side of ridge
130	10-25-91	DM 31 pre-construction
131	03-31-92	DM 31 completed
132	03-10-91	DM 35 pre-construction
133	02-24-92	DM 35 access
134	03-24-92	DM 35 building base and backing for curtain
135	03-24-92	DM 35 ready for curtain installation
136	03-24-92	Fabricating the curtain for DM 35
137	03-25-92	Hauling curtain up to DM 35
138	03-25-92	DM 35 curtain in-place
139	03-25-92	Covering the DM 35 curtain
140	03-25-92	Completing backfill at DM 35 by hand
141	03-25-92	DM 35 after backfilling
142	04-02-92	DM 35 mulched access at bottom
143	04-02-92	DM 35 mulched access at top
144	10-17-91	DM 36B pre-construction
145	03-28-92	DM 36 cutting access
146	03-29-92	Backfill at DM 36 B

Assigned Number	Date Taken	Subject or Comments
147	04-01-92	DM 36B completed
148	03-29-92	DM 36A south entrance
149	03-29-92	DM 36A north entrance
150	03-28-92	Access to DM 36 A
151	03-29-92	DM 36A opened up for backfilling
152	03-28-92	Load-haul-dump to DM 36A
153	03-29-92	DM 36A backfilled
154	04-01-92	DM 36A graded
155	04-01-92	Disturbance between DM 36 & 38 mulched
156	10-17-91	DM 37 pre-construction
157	03-29-92	DM 37 load-haul-dump with loader
158	03-29-92	DM 37 backfilled
159	03-29-92	DM 37 completed
160	10-17-91	DM 38 pre-construction
161	03-30-92	Filling DM 38
162	03-30-92	Backfill method used at DM 38
163	04-01-92	DM 38 completed
164	10-18-91	DM 39 pre-construction
165	03-29-92	DM 39 "washed sand and gravel" stockpile
166	03-30-92	Using the backhoe to push fill inside DM 39
167	03-30-92	Filling trench at DM 39
168	10-18-91	DM 40 pre-construction
169	03-30-92	Gravel stockpile below DM 40
170	03-30-92	Filling DM 40
171	03-30-92	DM 40 complete
172	10-18-91	DM 41A pre-construction
173	18-18-91	DM 41C pre-construction

Assigned Number	Date Taken	Subject or Comments
174	10-18-91	DM 41B pre-construction
175	03-30-92	Dumping gravel into DM 41B
176	03-30-92	Load-haul-dump to DM 41C
177	03-30-92	Load-haul-dump to DM 41A
178	04-09-92	Reclamation on DM 40 -41 access
179	04-09-92	DM 40-41 access mulched
180	03-08-91	DM 43 pre-construction
181	10-17-91	Top of shaft at DM 43
182	03-25-92	DM 43 access
183	03-25-92	Hauling from stockpile at DM 43
184	03-26-92	Scraper dumping below DM 43 with loader shuttling material to fill area
185	03-26-92	DM 43 filled
186	03-27-92	DM 43 graded with access to DM 44 & 45
187	04-09-92	DM 43 stockpile area and access trail revegetated
188	10-17-91	DM 44 adit pre-construction
189	10-17-91	Vertical opening at DM 44
190	10-17-91	Inclined opening leading to DM 44 cavity
191	03-26-92	DM 44 access
192	03-26-92	Shuttling sand and gravel to DM 44
193	03-26-92	Dumping load into vertical opening at DM 44
194	03-27-92	Looking into partially filled cavity at DM 44
195	03-27-92	Inclined opening at DM 44 filled
196	03-28-92	Vertical opening & adit at DM 44 filled
197	03-27-92	Working on DM 44-45 access
198	04-01-92	DM 44-45 access regrading
199	04-02-92	DM 44-45 access mulched

Assigned Number	Date Taken	Subject or Comments
200	10-17-91	DM 45 pre-construction
201	03-27-92	DM 45 access around DM 44
202	03-27-92	Fill ramp in cut to DM 45
203	03-27-92	DM 45 load-haul-dump
204	03-27-92	Dumping from to of ramp into DM 45
205	03-27-92	Starting to fill DM 45 with sand and gravel
206	03-27-92	DM 45 completed
207	04-02-92	Access disturbance around DM 45 revegetated
208	10-17-92	DM 46 pre-construction
209	03-25-92	Filling DM 46
210	03-25-92	DM 46 completed
211	04-09-92	DM 46 access and stockpile seeded and mulched
212	10-17-91	DM 48 pre-construction
213	10-17-91	DM 48 top of shaft
214	03-24-92	DM 48 access construction
215	03-25-92	Load-haul-dump to DM 48
216	03-25-92	Dumping sand and gravel into DM 48
217	03-26-92	DM 48 completed
218	03-26-92	Reclaiming the access road to DM 48
219	03-26-92	Mulching access to DM 48 with trail to Dm 49 forking to the right
220	10-18-91	DM 49 pre-construction
221	03-25-92	Scraper stockpiling sand and gravel below DM 49
222	03-25-92	Transferring fill up DM 49 access
223	03-25-92	Filling DM 49
224	03-25-92	Hauling to DM 49
225	03-25-92	DM 49 filled with sand and gravel

Assigned Number	Date Taken	Subject or Comments
226	04-02-92	Regrading DM 49 stockpile area
227	04-02-92	Crimping mulch on stockpile area below DM 49
228	03-28-92	Gold Bug access construction
229	03-28-92	Gold Bug access
230	04-01-92	Reclaiming Gold Bug access
231	04-02-92	Main Gold Bug access reclamation complete
232	03-30-92	Sand and gravel source designated by supplier
233	03-25-92	TS 14 scraper transferring sand and gravel to stockpiles below openings
234	03-25-92	Looking across the sand and gravel supply area toward the Gold Bug Site
235	04-13-92	Reclaiming the sand and gravel supply area
236	4-30-92	Added Gold Bug Adit pre-construction
237	4-30-92	Plugging Gold Bug Adit
238	4-30-92	Face of plug graded at Gold Bug Adit
239	4-30-92	Gold Bug Adit completed
Washington Site		
240	10-18-91	Washington Shaft A pre-construction
241	03-24-92	Shaft A uncovering the collar and leveling
242	03-24-92	Delivering bridge sections for Shaft A Washington
243	03-24-92	Using 755 loader to lower 1st section into place over Washington Shaft A
244	03-24-92	4th section in-place over Washington Shaft A
245	03-24-92	Unloading bridge sections
246	03-24-92	Cover on Washington Shaft A completed
247	10-18-91	Washington Shaft B pre-construction
248	03-24-92	Removing fence at the Washington

Assigned Number	Date Taken	Subject or Comments
249	03-24-92	Pulling fence posts at the Washington
250	03-24-92	Pushing fill to Washington Shaft B
251	03-24-92	Grading Shaft B
252	03-24-92	Disturbance area at Washington Shafts regraded
253	03-27-92	Washington Shaft B mulched
254	04-09-92	Fence replaced around Washington Shafts
255	03-07-91	Pre-construction DM 63
256	10-23-91	DM 63 completed
257	03-07-91	DM 64 pre-construction
258	10-23-91	DM 64 plugged by hand
Pioneer Site		
259	10-18-91	DM 24 pre-construction
260	11-15-91	Excavating to expose adit at DM 24
261	10-24-91	Solid timbering exposed at DM 24
262	11-14-91	36" X 30' CMP in Pioneer Adit, DM 24
263	03-30-92	Hatch for access culvert
264	03-30-92	Backfill securing access culvert
265	04-09-92	Pioneer Adit, DM 24, completed
Senator Site		
266	10-25-91	DM 20 pre-construction
267	11-15-91	DM 20 backfilled and graded
268	04-30-92	DM 20 after reclamation
269	02-28-91	DM 21 pre-construction
270	02-28-92	Looking into shaft at DM 21
271	10-25-91	Access developed to DM 21
272	04-09-92	DM 21 completed

Assigned Number	Date Taken	Subject or Comments
273	10-25-92	DM 22 pre-construction
274	11-15-91	DM 22 collapsed and filled
275	04-09-92	DM 22 regraded and mulched
276	04-09-92	Looking downhill at reclaimed DM 22
Golden Leaf Site		
277	03-11-91	Golden Leaf Mine Pre-construction
278	03-11-91	Looking down on caved portion of the Golden Leaf Mine
279	10-23-91	Solid timbers exposed in Golden Leaf Mine bottom fill graded
280	11-14-91	Pushing 35 ft CMP into Golden Leaf Mine
281	11-14-91	36 inch culvert installed in Golden Leaf Mine
282	11-15-91	Filling by hand around the CMP
283	11-15-91	Hand work around end of access culvert at Golden Leaf Mine
284	04-07-92	Access hatch installed on CMP at Golden Leaf Mine
285	04-08-92	Golden Leaf Mine graded and mulched
286	04-08-92	Golden Leaf Mine culvert installation complete
287	03-11-91	Pre-construction Manway Complex
288	10-25-91	Starting to excavate at the Manway
289	10-25-91	Hydraulic excavator working at the Manway Complex
290	10-25-91	Underground water tank exposed at the Manway
291	04-07-92	Collapse of underground structure and backfilling completed at the Manway
292	04-08-92	Dressing the disturbed area around the Manway
293	04-08-92	Final grading prior to revegetation
294	04-08-92	Manway Complex completed
295	03-10-91	Pre-construction DM 50

Assigned Number	Date Taken	Subject or Comments
296	11-06-91	DM 50 looking from above
297	03-23-92	DM 50 filled and graded
298	04-08-92	DM 50 seeded and mulched
299	03-30-92	DM 54 collar and dump
300	03-30-92	DM 55 pre-construction
301	04-07-92	DM 54 backfilled
302	04-07-92	DM 54 completed
303	04-07-92	DM 56 pre-construction
304	04-07-92	DM 56 looking into the opening
305	04-07-92	Track loader plugging DM 56
306	04-08-92	Mulching access disturbance at DM 56
307	04-07-92	DM 57 pre-construction
308	04-07-92	Digging up timbers to collapse entrance to DM 57
309	04-07-92	Trench backfilled at DM 57
310	04-08-92	DM 57 completed
311	04-07-92	Pre-construction view of DM 50 shaft
312	04-07-92	Pre-construction view DM 58 pit
313	04-08-92	DM 58 access & transfer point
314	04-08-92	Load-haul-dump at DM 58
315	04-08-92	Standing on fill and removing timbers a DM 58
316	04-08-92	DM 58 shaft backfilled with washed sand and gravel
317	04-08-92	DM 58 pit backfilled
318	04-10-92	DM 58 crimping the access
319	04-07-92	DM 59 pre-construction
320	04-07-92	DM 59 exposing the adit
321	04-07-92	DM 59 probing the opening

Assigned Number	Date Taken	Subject or Comments
322	04-07-92	DM 59 adit plugged
323	04-07-92	Backfilling DM 59 with washed sand and gravel
324	04-07-92	DM 59 regraded
325	04-07-92	DM 59 access
326	04-08-92	DM 59 access seeded and mulched; site completed
327	03-30-92	DM 60 pre-construction
328	04-07-82	DM 60 access
329	04-07-92	DM 60 caved and plugged
330	04-07-92	Backfilling DM 60
331	04-07-92	DM 60 backfilled
332	04-07-92	DM 60 regraded
333	04-08-92	DM 60 reclaiming access
334	04-08-92	DM 60 completed
335	03-30-92	DM 61 top of crater
336	03-30-92	DM 61 looking into crater
337	04-01-92	DM 61 access
338	04-07-92	DM 60-61 gravel transfer point
339	04-07-92	Track loader picking-up load for DM 61
340	04-07-92	Track loader dumping into DM 61
341	04-07-92	DM 61 load-haul-dump
342	04-07-92	DM 61 load-haul-dump
343	04-07-92	DM 60-61 transfer point regraded
344	04-13-92	DM 60-61-62 access reclamation
345	04-13-92	Recontouring DM 61 Access with Case 580
346	04-13-92	DM 60-61-62 access mulched
347	03-30-92	DM 62 pre-construction
348	04-09-92	DM 62 access construction

Assigned Number	Date Taken	Subject or Comments
349	04-09-92	DM 62 fabricating bulkhead
350	04-09-92	Lowering bulkhead into DM 62
351	04-09-92	Laborer working on bulkhead
352	04-09-92	DM 62 bulkhead completed
353	04-09-92	DM 62 access
354	04-10-92	Transferring concrete to DM 62 in loader bucket
355	04-10-92	DM 62 working concrete
356	04-10-92	DM 62 working concrete
357	04-13-92	Reclaiming access to DM 62
358	04-10-92	DM 62 top of plug
359	04-01-92	Washed gavel supply area south on creek
360	04-01-92	Another view of the gravel supply area
Hillside Site		
361	03-09-91	Pre-construction view of adit
362	10-25-91	Trench and loose timbers excavated
363	11-11-91	Delivery of 36" corrugated metal pipes
364	11-14-91	Moving the 30′ CMP into position
365	11-15-91	Burying the CMP and recontouring
366	04-07-92	Hatch installed and backfilling completed
367	04-13-92	Completed
Wadams Site		
368	11-15-91	DM 52 stope A pre-construction
369	11-15-91	DM 52 stope B pre-construction
370	11-15-91	DM 52 backfilled
371	04-13-92	DM 52 seeded and mulched

Assigned Number	Date Taken	Subject or Comments
372	04-13-92	DM 52 completed
373	11-11-91	DM 53 A pre-construction
374	11-11-91	Preparing base and backing for DM 53A
375	11-11-91	Moving I-beam frame into place at DM 53A
376	11-11-91	Frame in-place over DM 53A
377	11-12-91	Attaching 3/8-inch plates & adding 4th vertical beam
378	11-12-91	DM 53A bottom portion of steel curtain completed
379	11-12-91	Modifying frame
380	11-13-91	Upper portion of steel curtain as-fabricated for DM 53A
381	11-11-91	DM 53C pre-construction
382	11-12-91	DM 53B pre-construction
383	11-12-91	DM 53D pre-construction
384	11-11-91	Backfilling DM 53D
385	11-13-91	Backfilling against curtain at DM 53A
386	11-13-91	Hauling fill to openings DM 53B-E
387	04-13-92	DM 53B-C-D backfilled and regraded
388	04-13-92	DM 53A-B-C-E backfilled and regraded
389	04-30-92	DM53 seeded and fertilized
390	04-30-92	Site completed
391	04-09-92	Stope exposed in road cut near Wadams
392	04-09-92	Plugging exposed stope
393	04-09-92	Stope plugged with large rock
394	04-09-92	Stope complete

Assigned Number	Date Taken	Subject or Comments
French Site		
395	11-15-91	Openings C and A pre-construction
396	11-15-91	Opening B pre-construction
397	11-15-91	Openings A, B and C filled and regraded
398	04-09-92	Crimping mulch on openings A, B, & C
399	11-15-91	Opening D pre-construction
400	11-15-91	Opening D backfilled and regraded
401	04-09-92	Opening D completed
Box X Site		
402	04-10-92	Box X2 Shaft pre-construction
403	04-10-92	Backfilling Box X2 Shaft
404	04-10-92	Box X2 Shaft complete
405	04-10-92	Box X pre-construction
406	04-10-92	Cleaning and regrading the Box X
407	04-10-92	Debris stacked and Box X regraded
408	04-10-92	Box X seeded and mulched

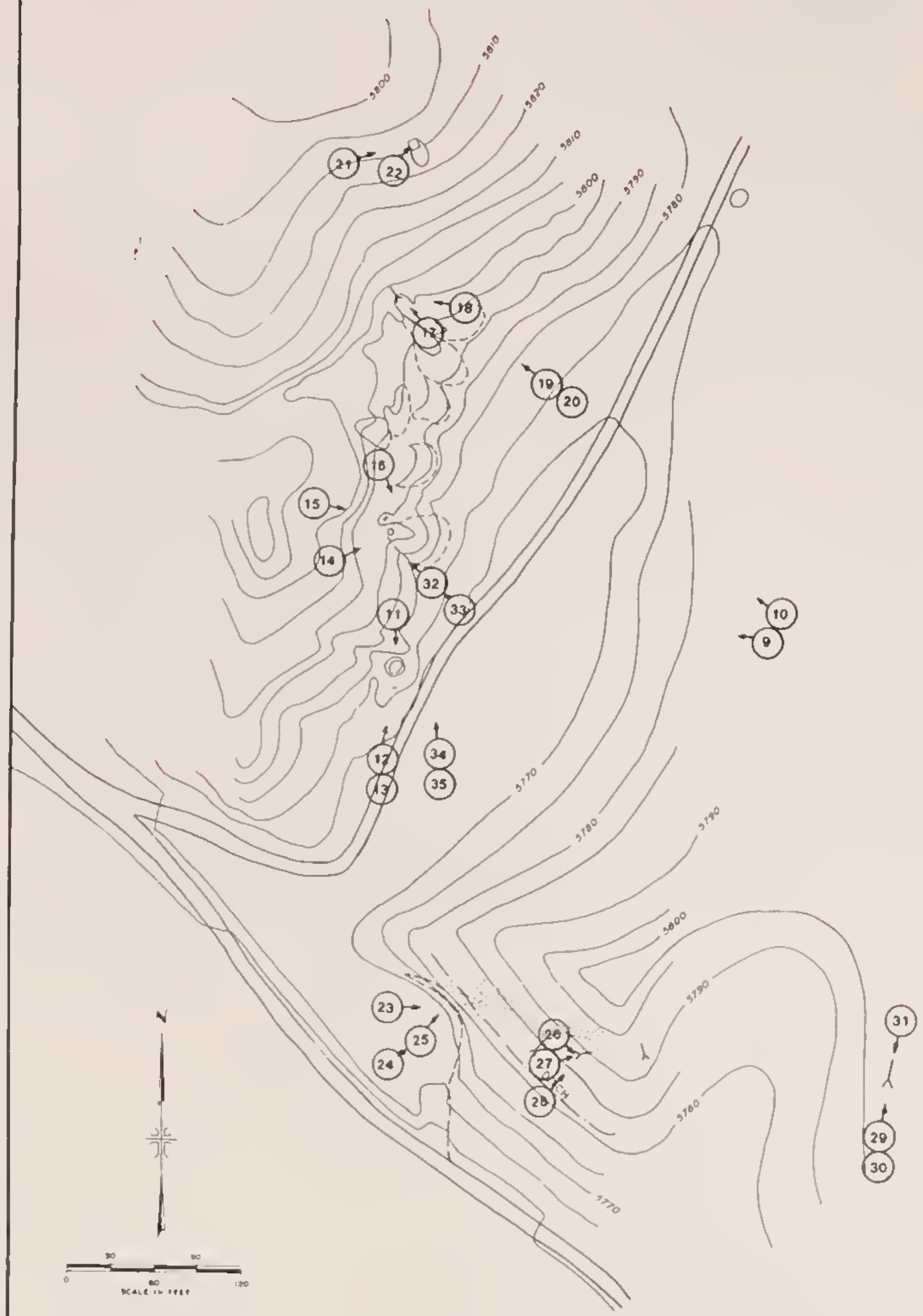
8.2 Photo Index Maps

Photo Index Maps for each of the 13 individual sites are provides on the next six pages. From one to three sites appear on each sheet. The individual site maps appear in the sequence used throughout this report:

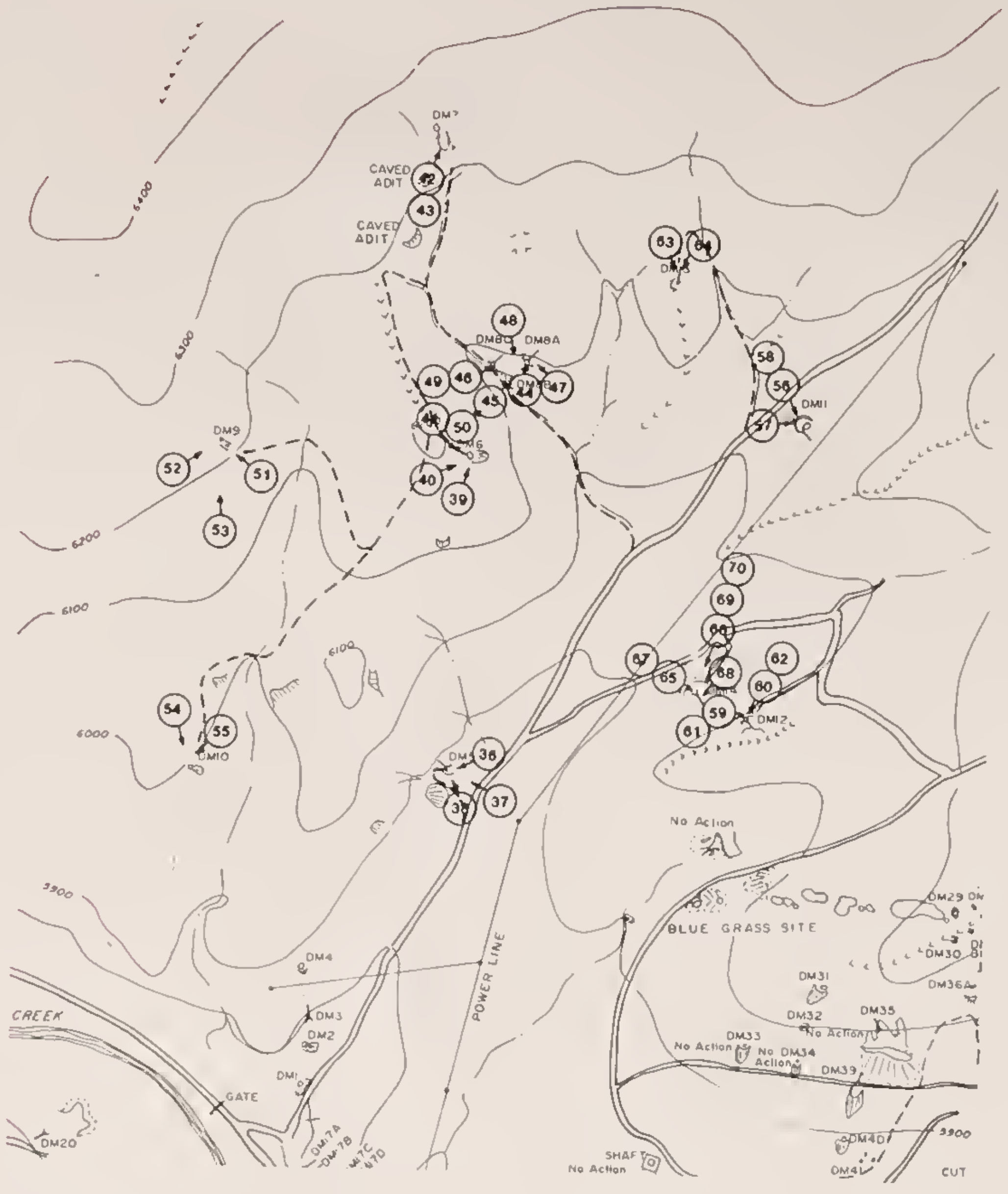
Sheet 1	Hand Placer Southwest Section 5 East Half Section 5
Sheet 2	Bluegrass
Sheet 3	Gold Bug
Sheet 4	Senator Washington Pioneer
Sheet 5	Golden Leaf Hillside with Wadams DM52
Sheet 6	Wadams French Box X

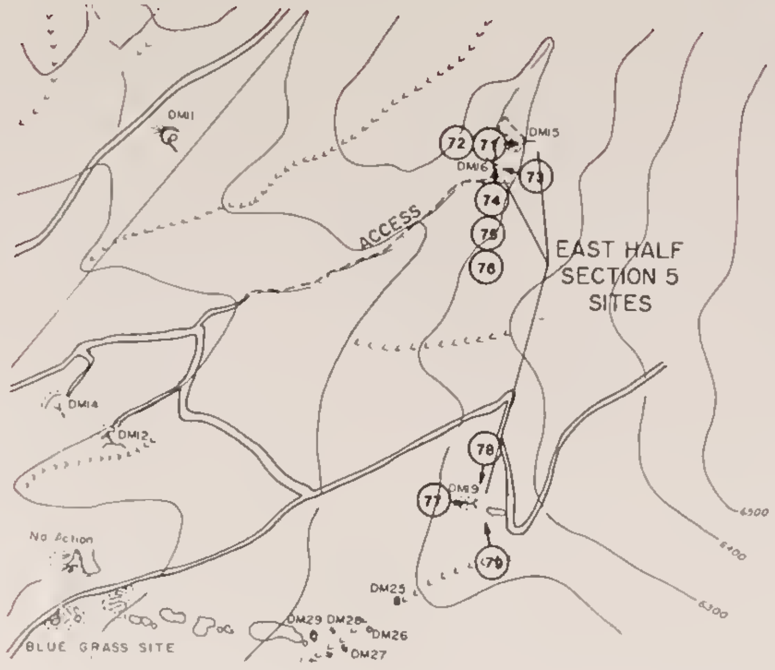
8.3 Photos/Slides

Photo-documentation of Bannack Mining District Project construction begins on the following page.



HAND PLACER PHOTO INDEX MAP





EAST HALF SECTION S PHOTO INDEX MAP

SOUTHWEST SECTION S PHOTO INDEX MAP

SITE PLAN AND GENERAL LAYOUT

BANNACK MINING DISTRICT
PHOTO INDEX MAP
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

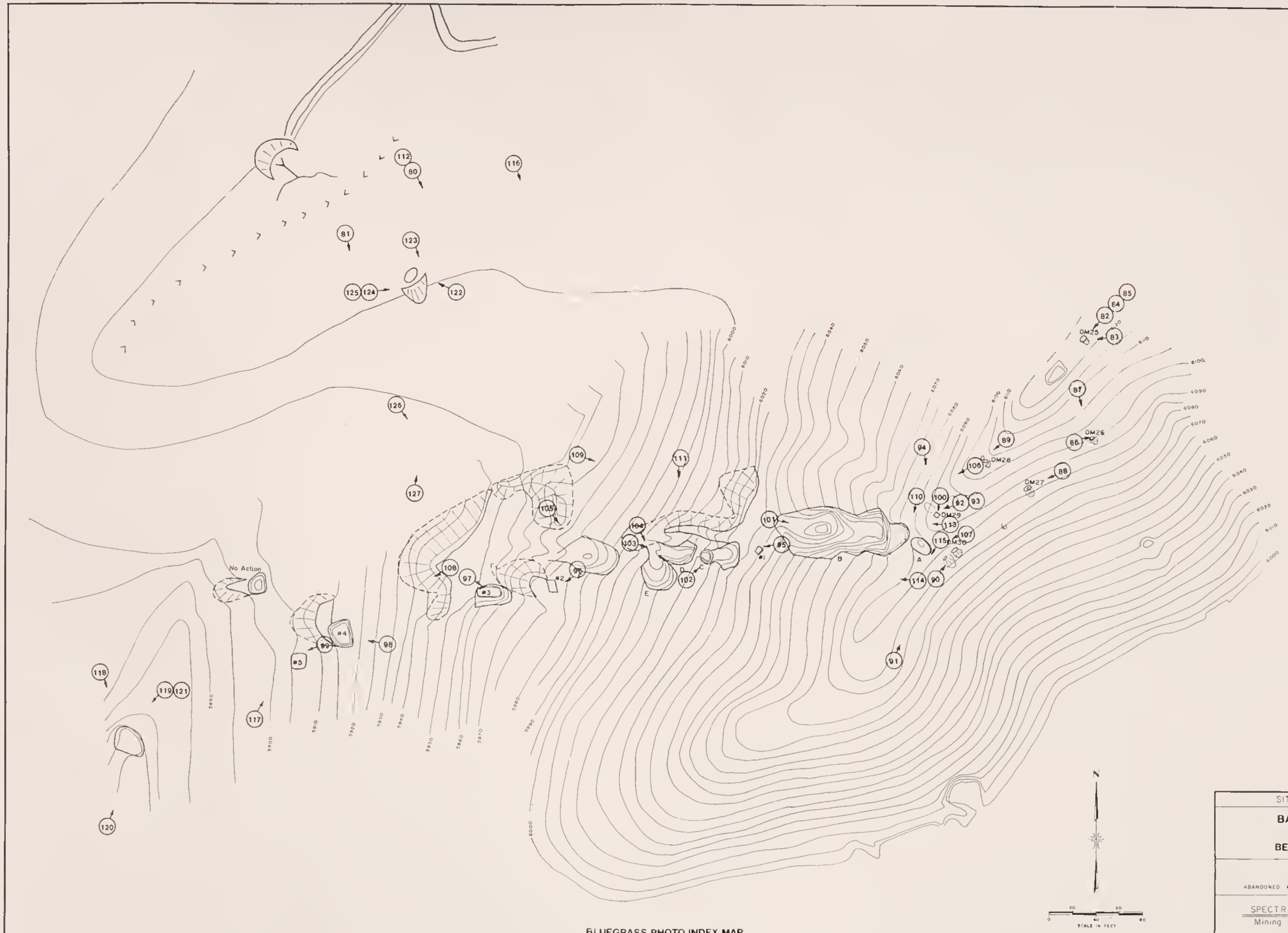
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE	May 1992
DRAWN BY	DLO
APPROVED BY	DM

REVISIONS

NO.	DATE	BY

SHEET NO 1 of 6



BLUEGRASS PHOTO INDEX MAP

SITE PLAN AND GENERAL LAYOUT

BANNACK MINING DISTRICT PHOTO INDEX MAP

BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

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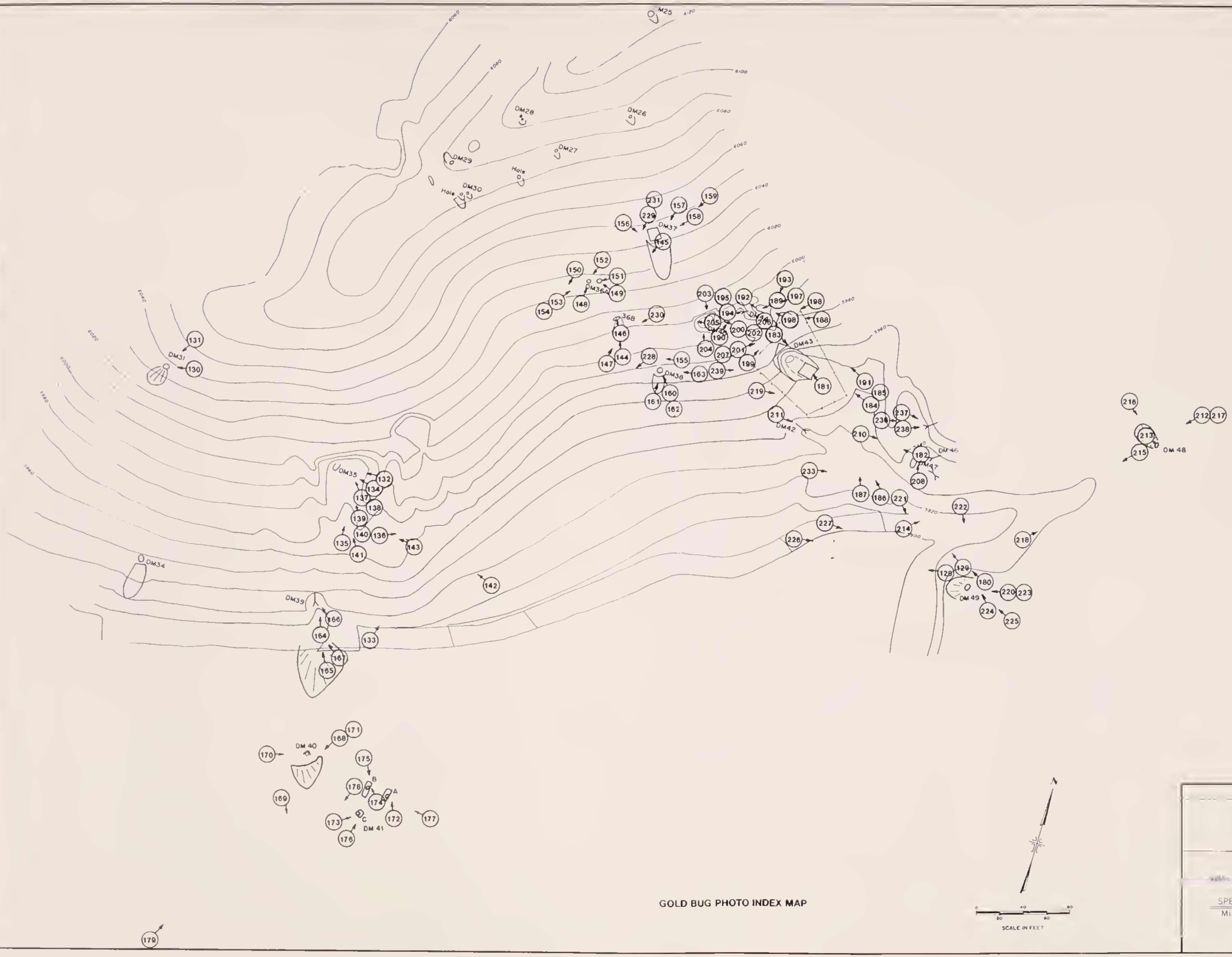

GOLD BUG PHOTO INDEX MAP

SITE PLAN AND GENERAL LAYOUT

BANNACK MINING DISTRICT
PHOTO INDEX MAP
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

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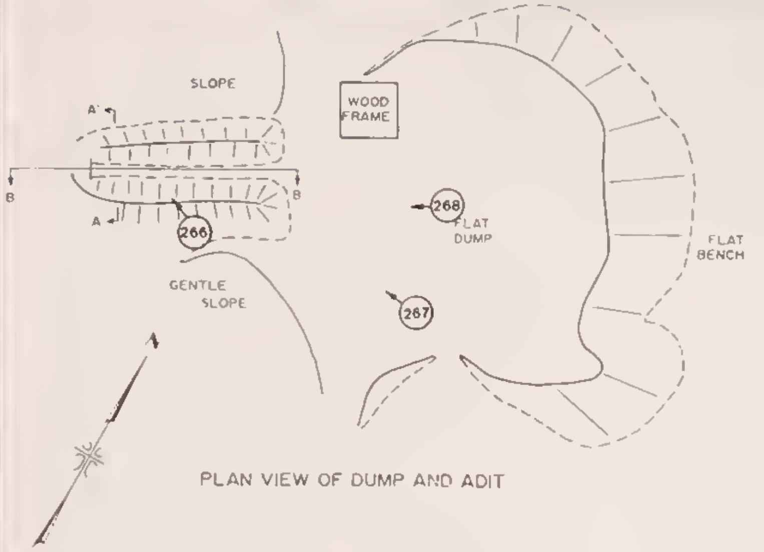
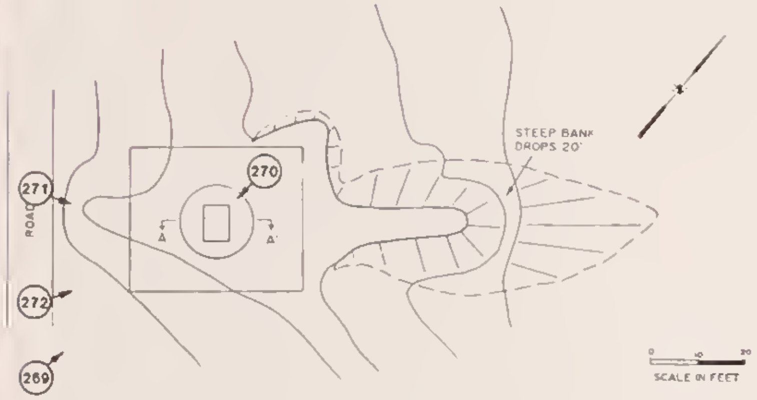
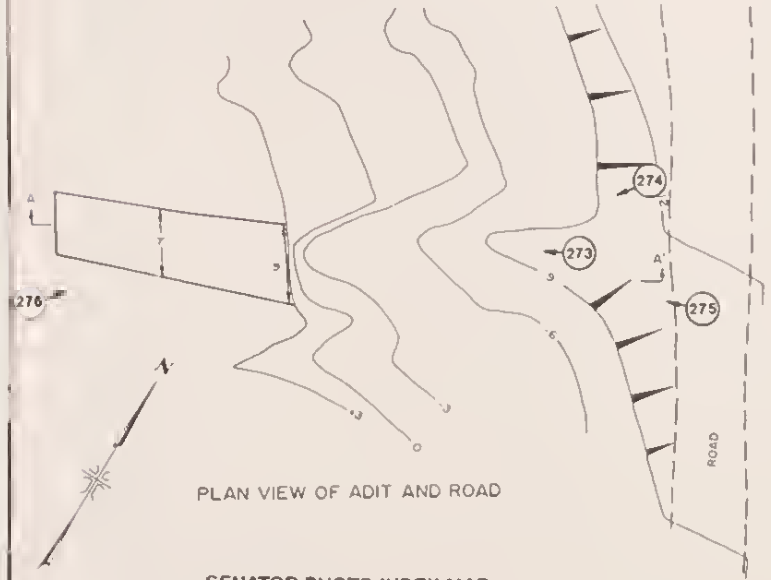


PLAN VIEW OF DUMP AND ADIT

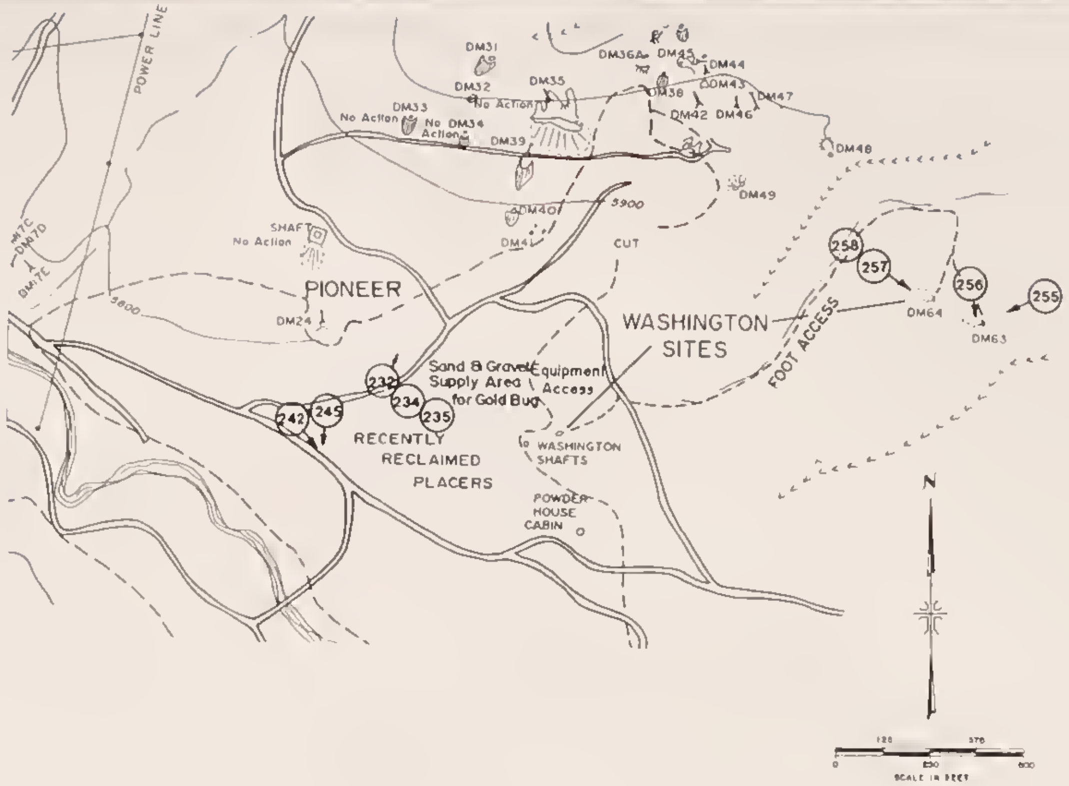


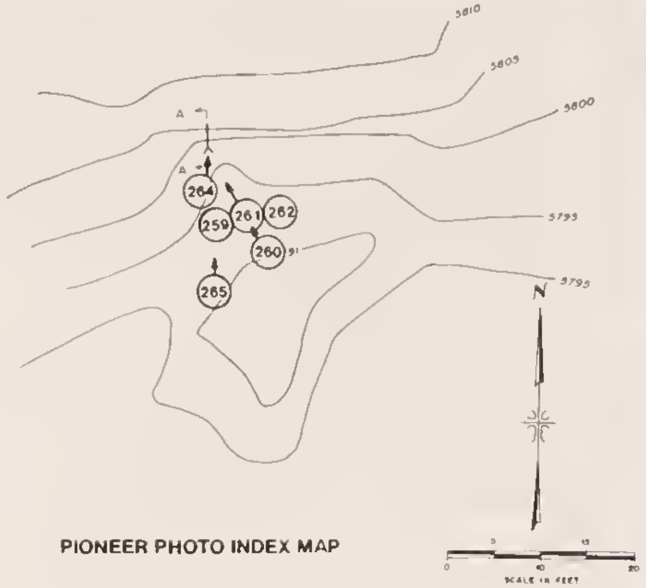
PLAN VIEW OF DUMP AND SHAFT



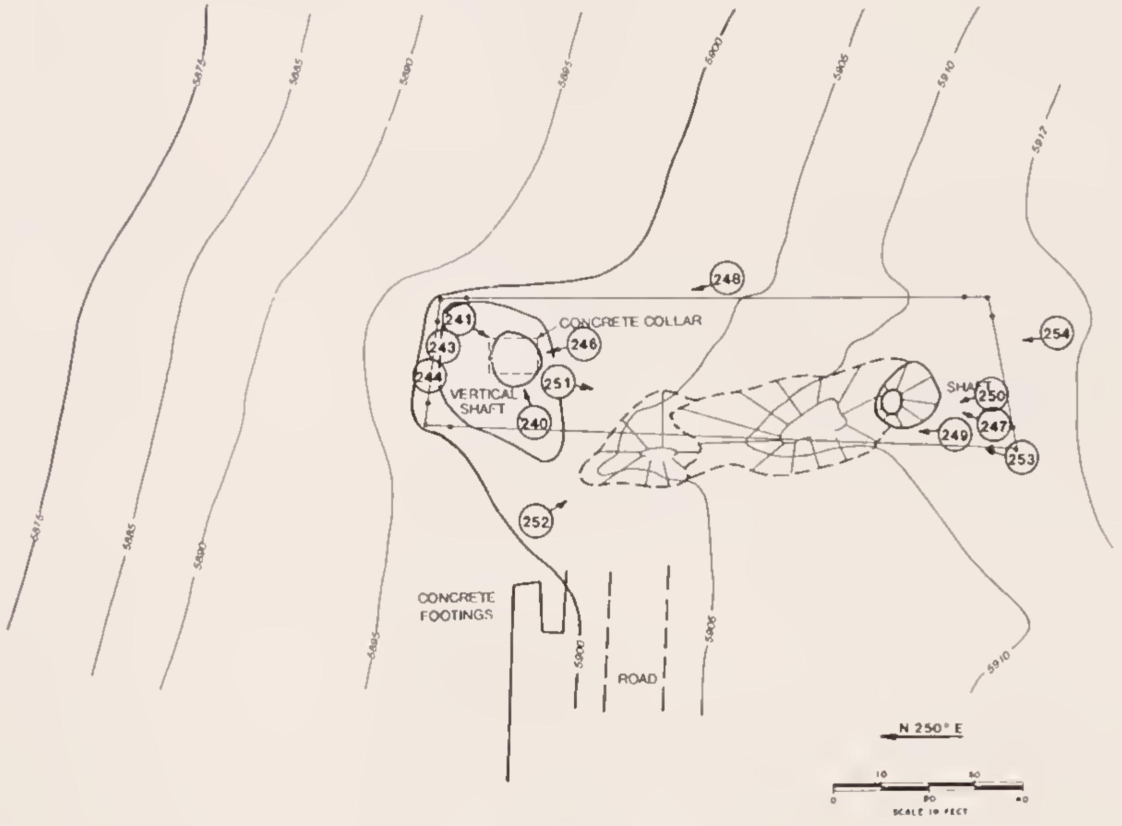
PLAN VIEW OF ADIT AND ROAD

SENATOR PHOTO INDEX MAP





PIONEER PHOTO INDEX MAP



WASHINGTON PHOTO INDEX MAP

SITE PLAN AND GENERAL LAYOUT

BANNACK MINING DISTRICT PHOTO INDEX MAP

BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers
3302 4th AVE NORTH
BILLINGS, MONTANA

DATE May 1992
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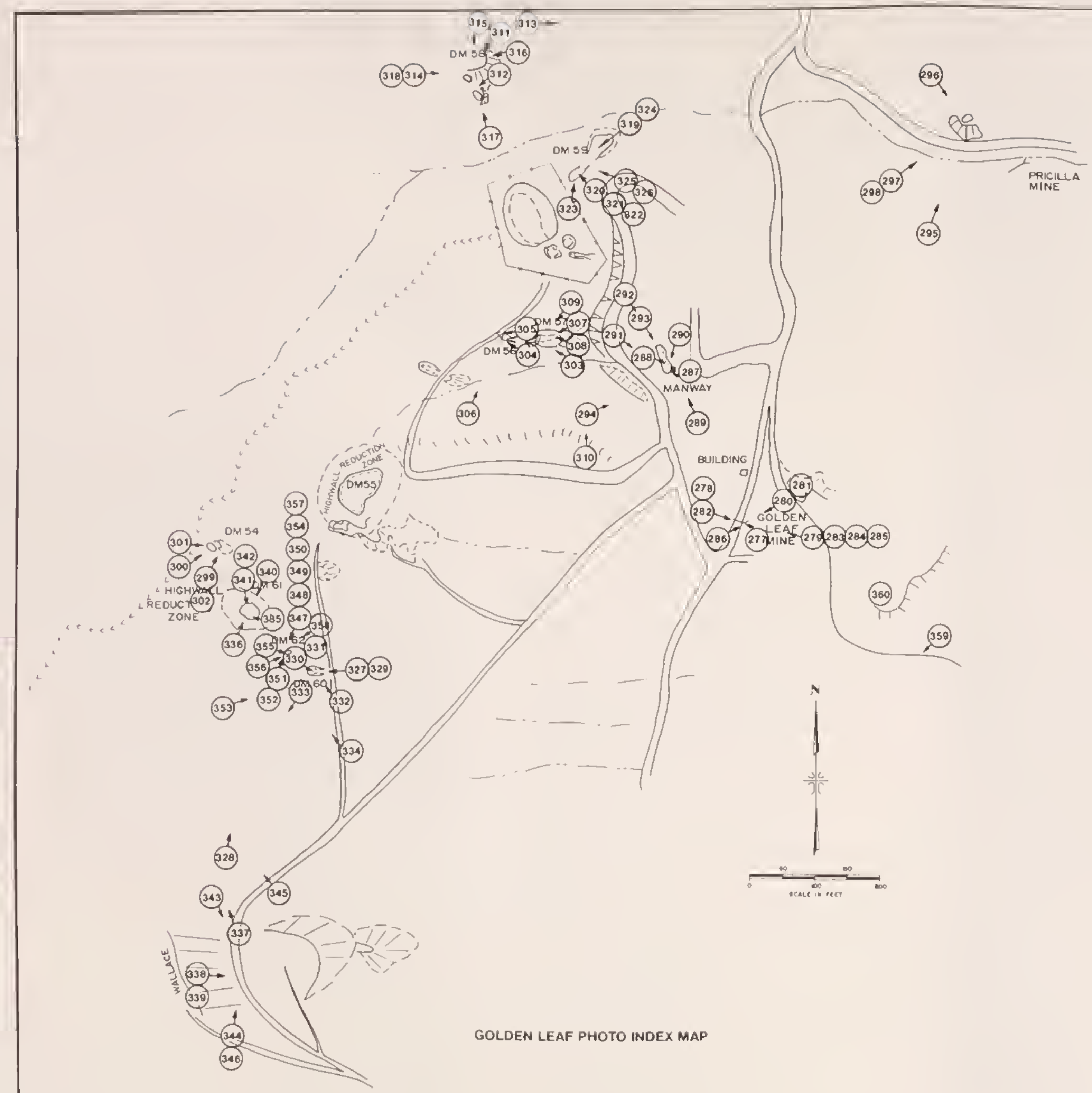
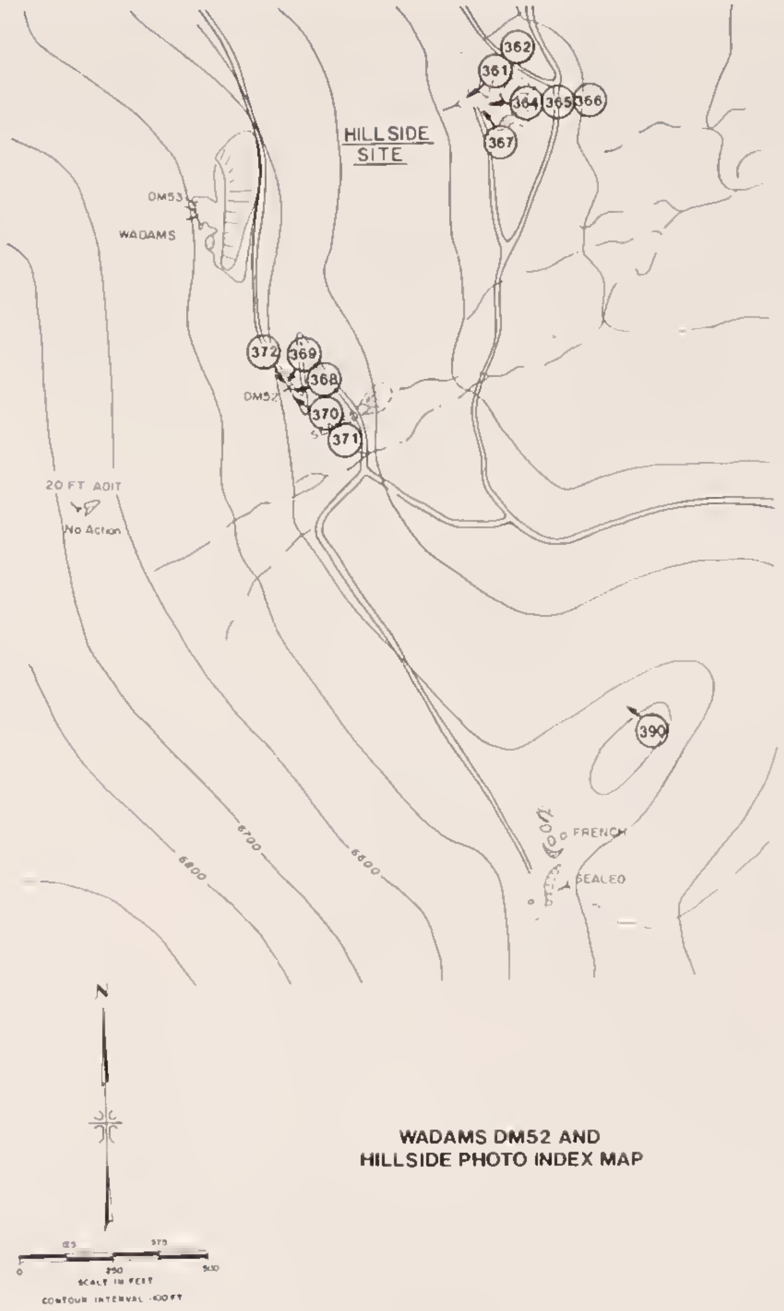
SHEET NO 4 of 6



GOLDEN LEAF PHOTO INDEX MAP



WADAMS DM52 AND
HILLSIDE PHOTO INDEX MAP

SITE PLAN AND GENERAL LAYOUT

BANNACK MINING DISTRICT
PHOTO INDEX MAP

BEAVERHEAD COUNTY, MDNTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

DATE May 1992
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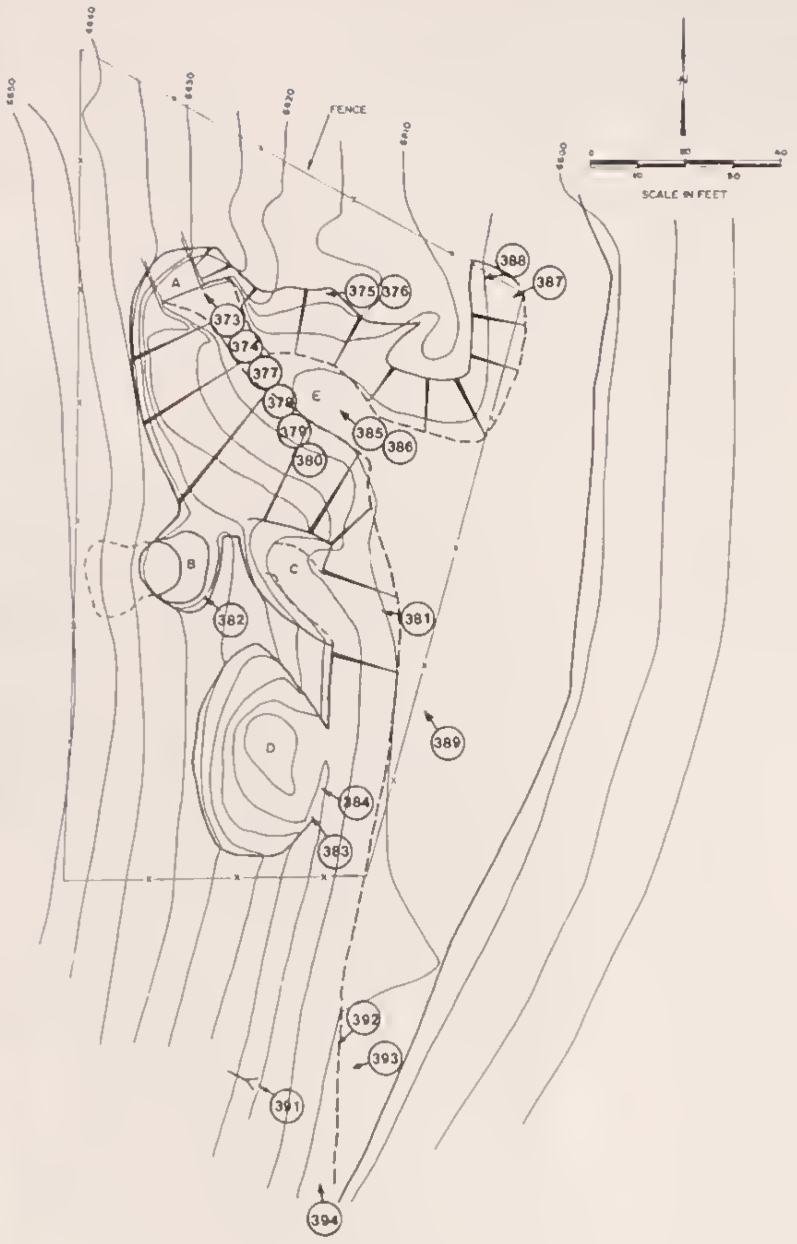
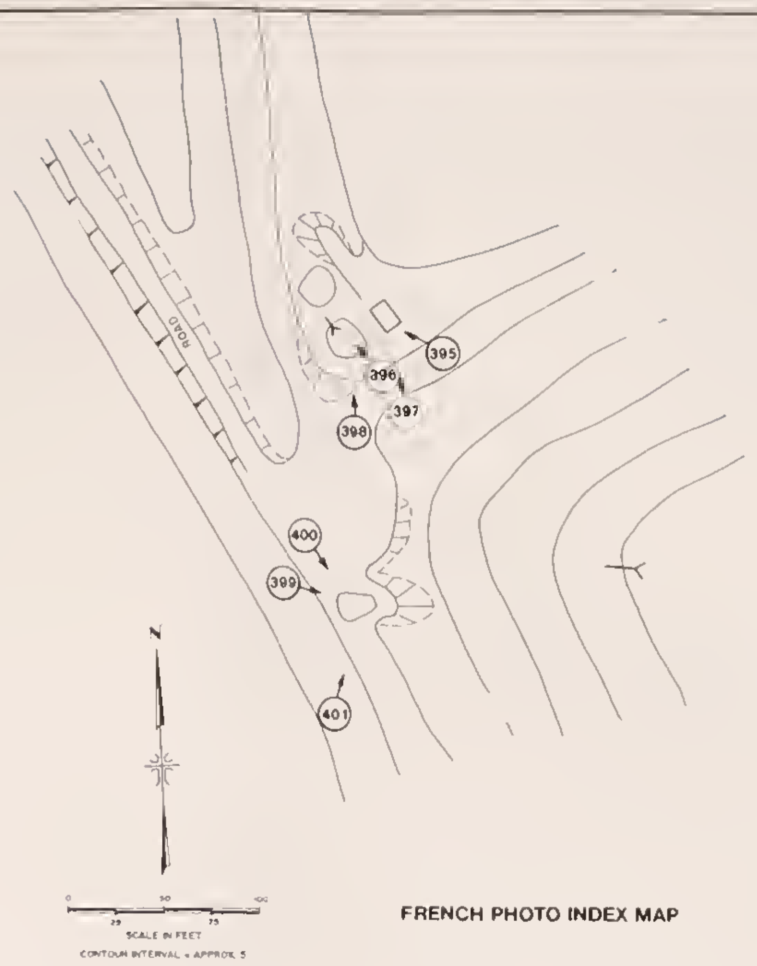
REVISIONS NO.	DATE	BY

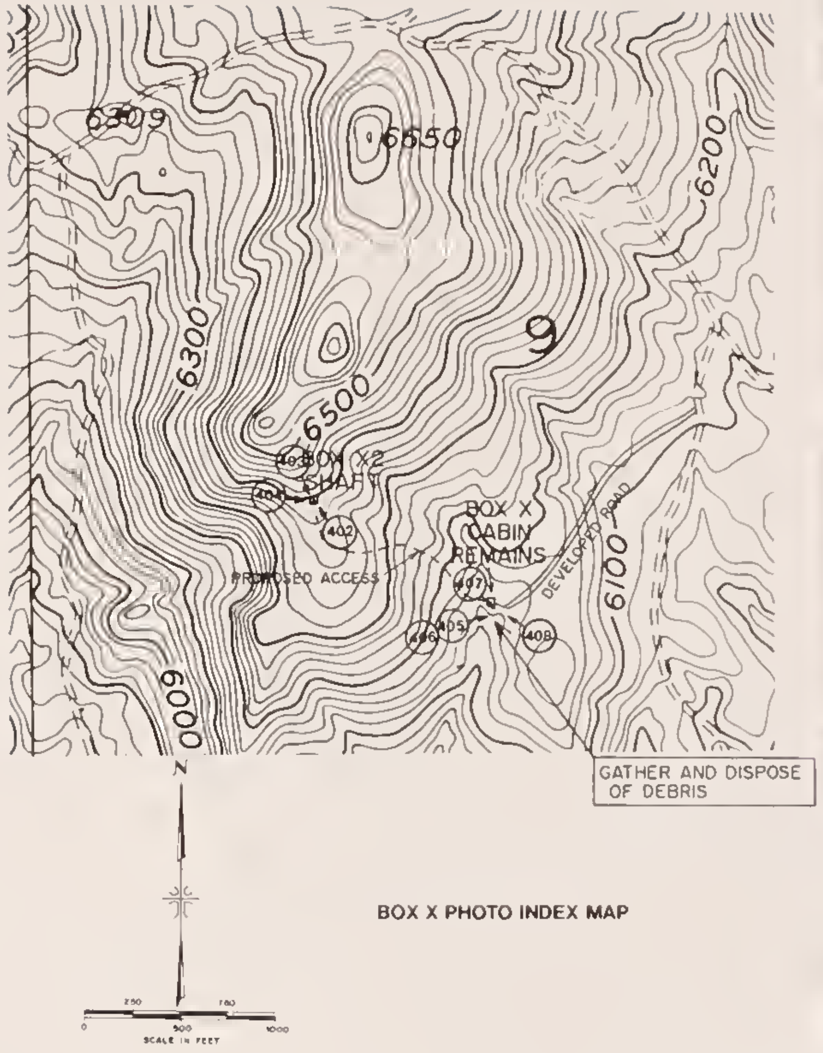
SHEET NO 5 of 6



WADAMS PHOTO INDEX MAP



FRENCH PHOTO INDEX MAP



BOX X PHOTO INDEX MAP

SITE PLAN AND GENERAL LAYOUT

BANNACK MINING DISTRICT
PHOTO INDEX MAP
BEAVERHEAD COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

3302 4th AVE NORTH
BILLINGS, MONTANA

DATE May 1992
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APPROVED BY: DM

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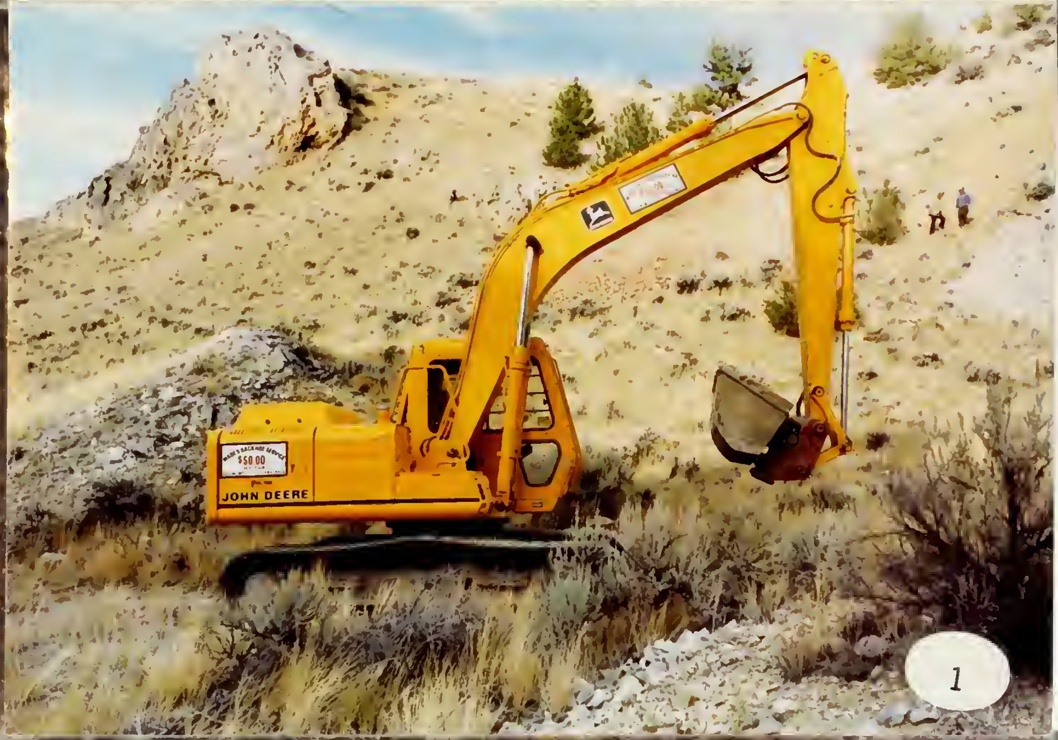
SHEET NO 6 of 6

8.3 Photos/Slides

Photo-documentation of Bannack Mining District Project construction begins on the following page.

CONTRACTORS

EQUIPMENT



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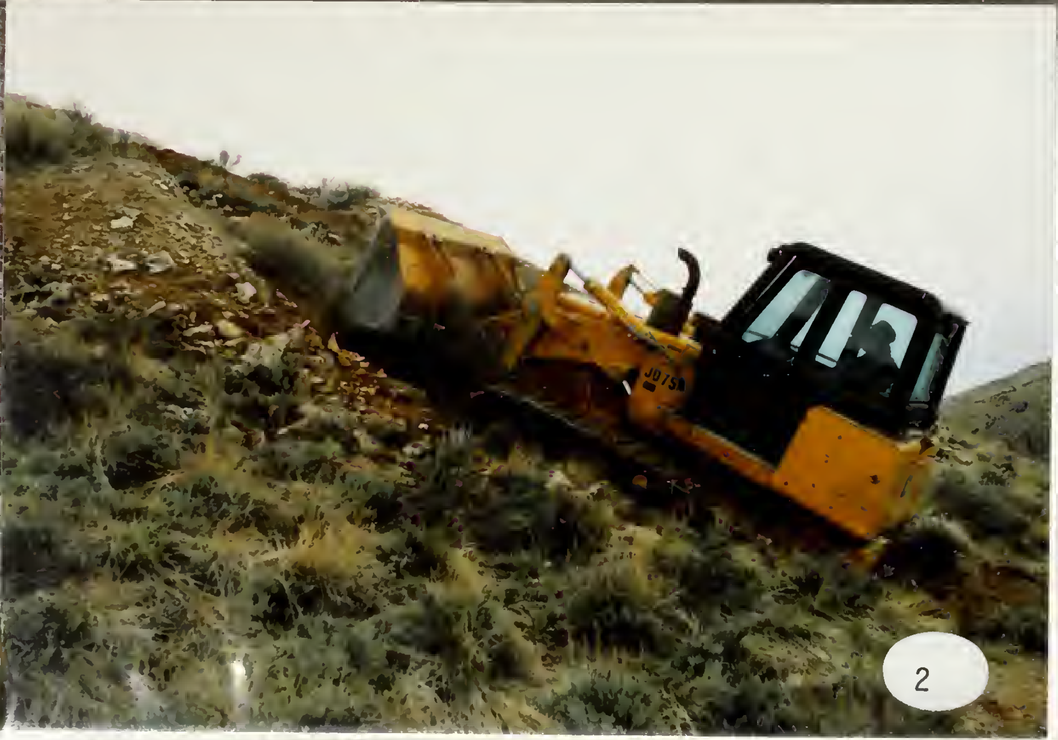

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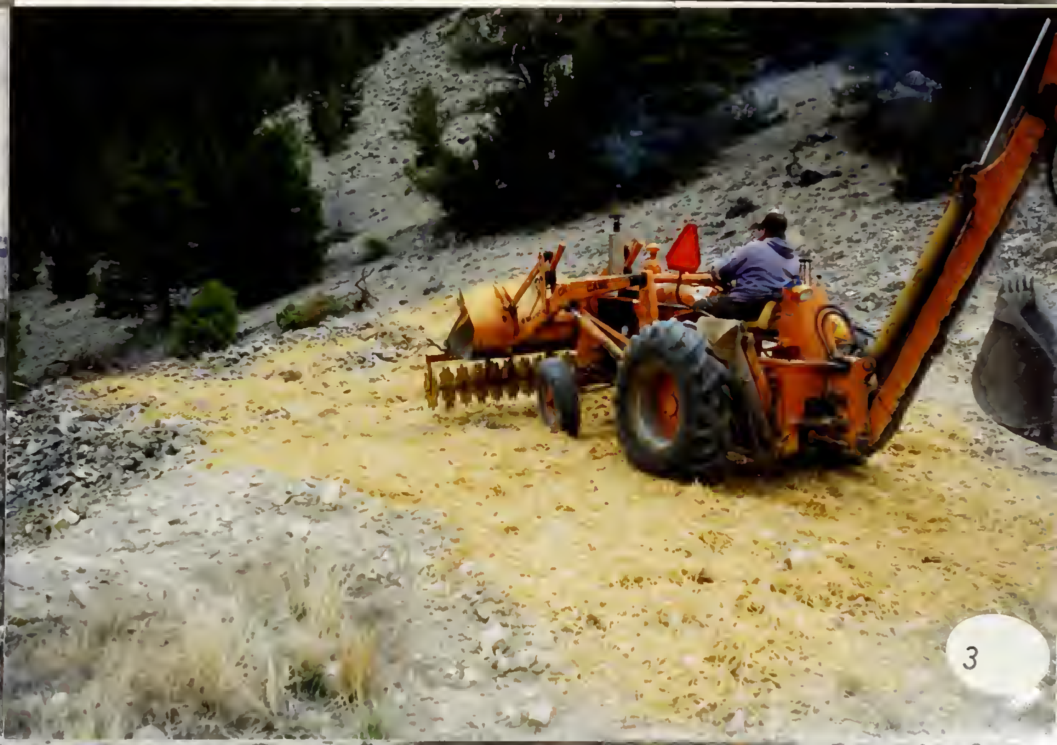

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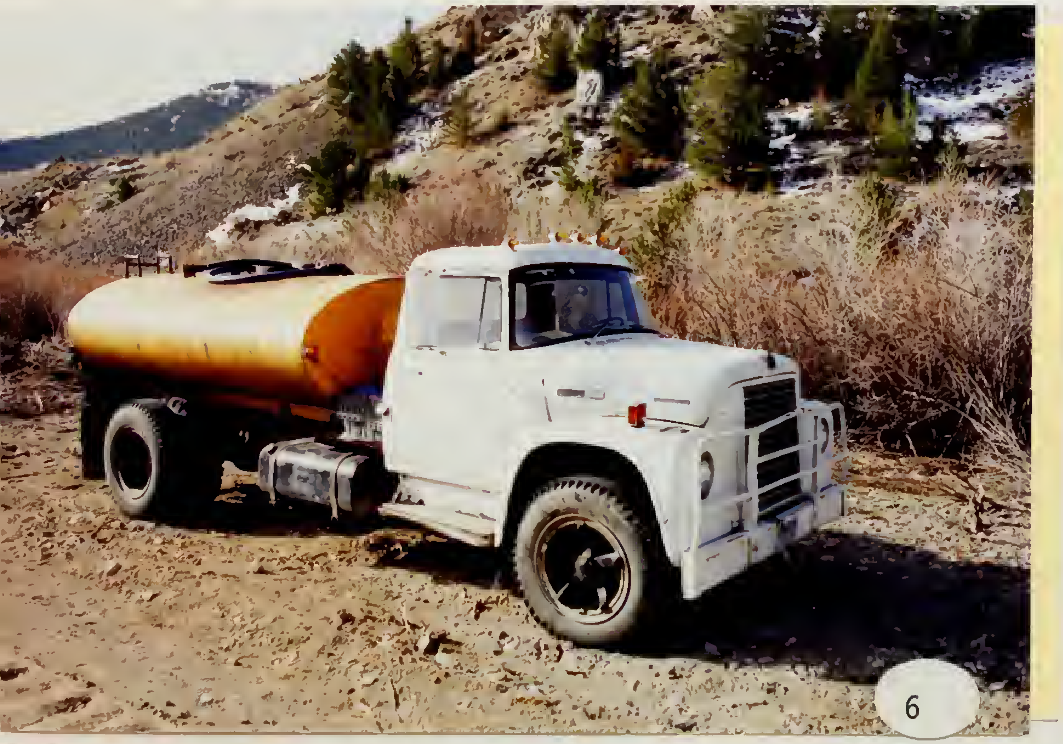

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HAND PLACER SITE CONSTRUCTION

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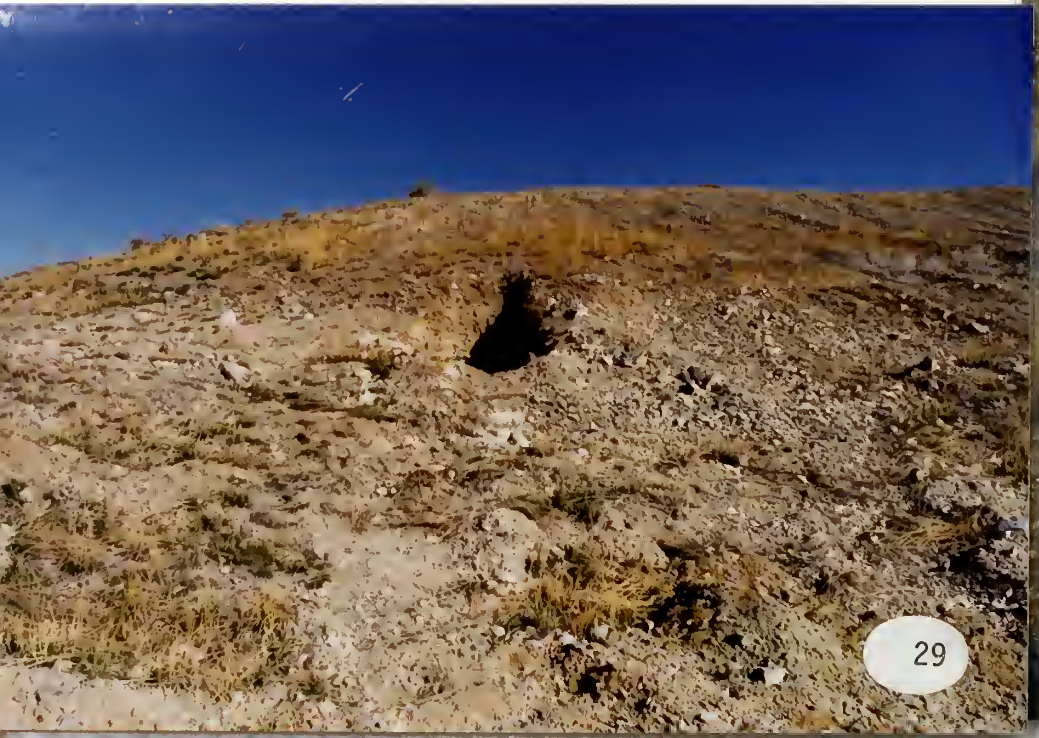

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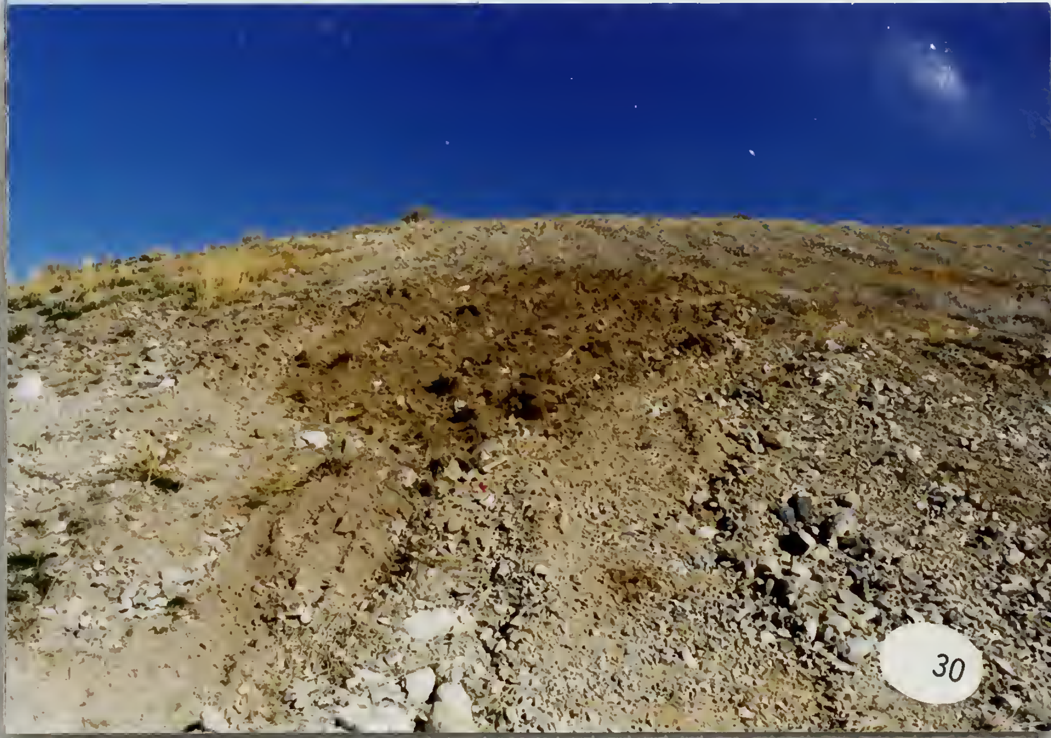

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SOUTHWEST
SECTION 5 SITE
CONSTRUCTION

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EAST HALF
SECTION 5
CONSTRUCTION

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BLUEGRASS
SITE
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GOLD BUG

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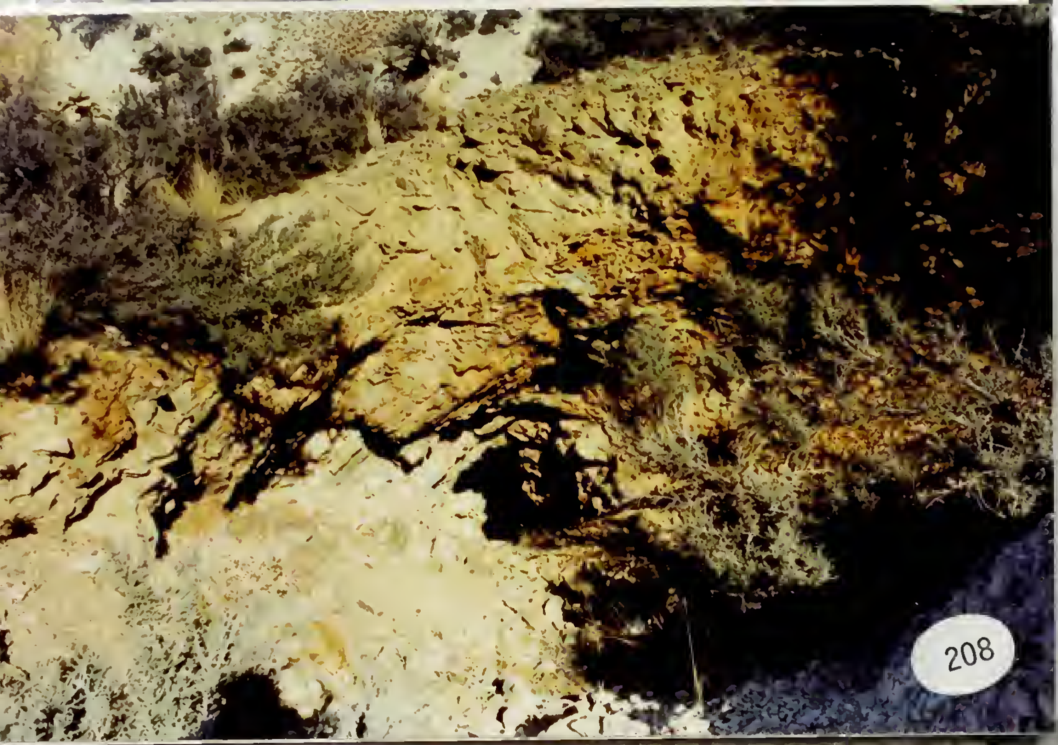

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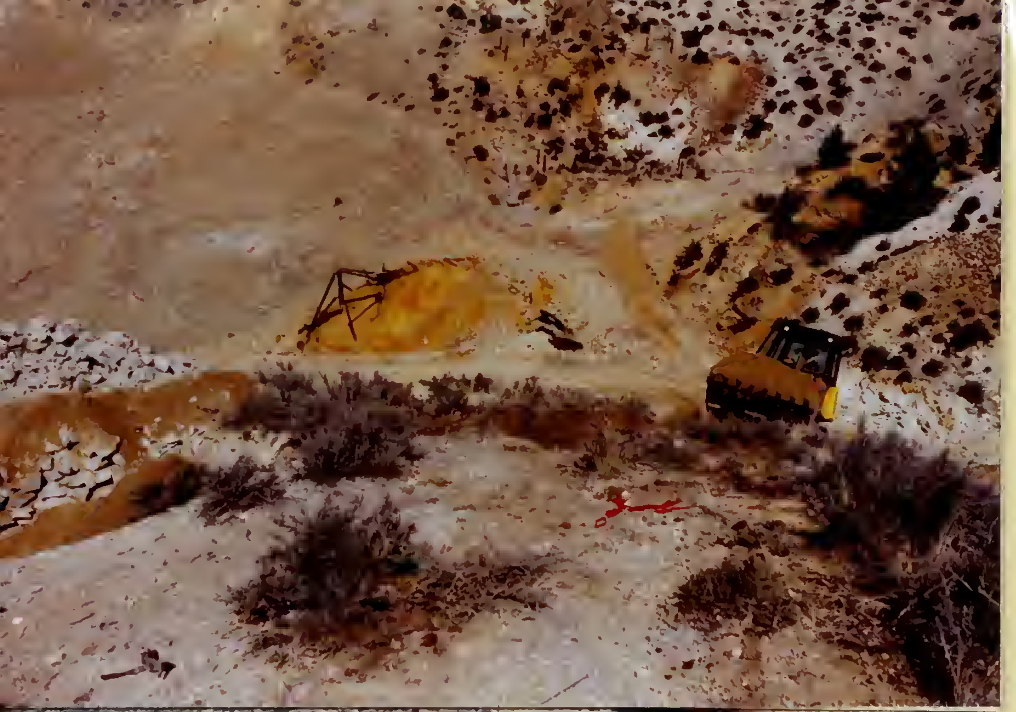

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WASHINGTON
SITE
CONSTRUCTION

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Small
Short Adit in draw
Above washington shafts

6-35

DM 64

PIONEER
SITE
CONSTRUCTION

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SENATOR SITE CONSTRUCTION

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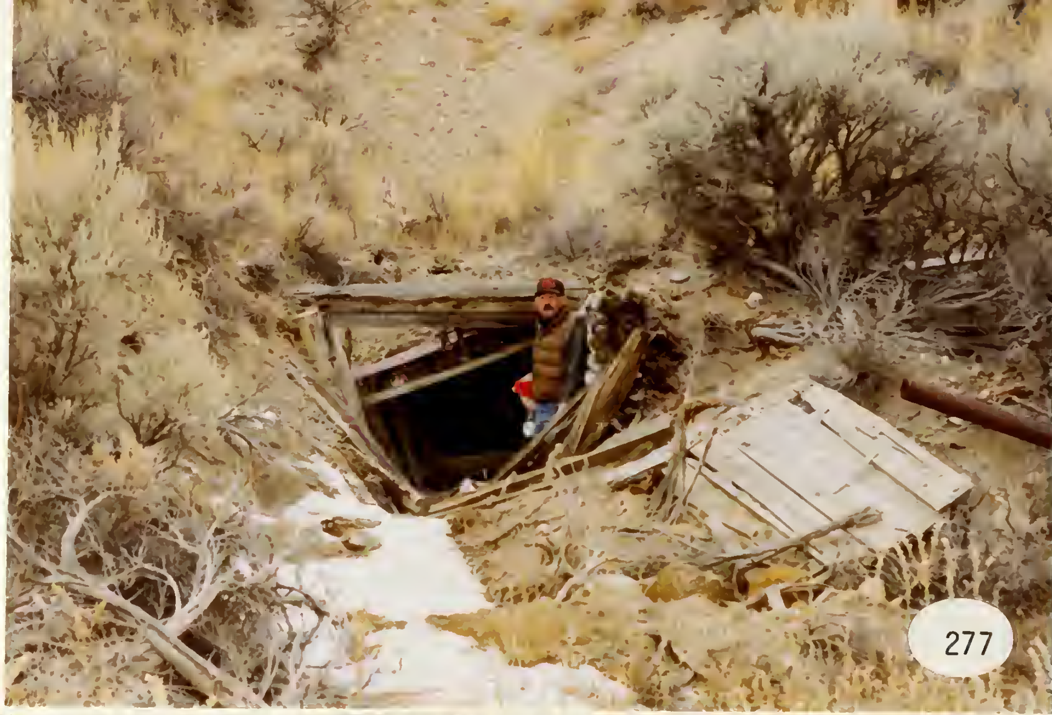
[illegible]

GOLDEN LEAF
SITE
CONSTRUCTION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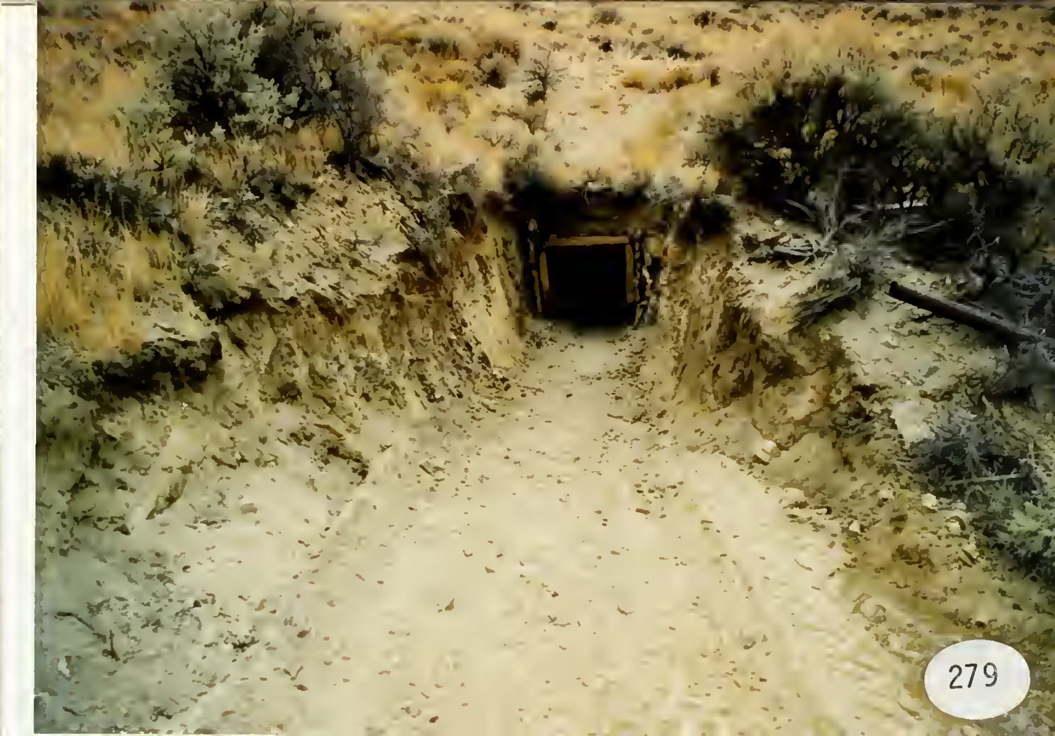
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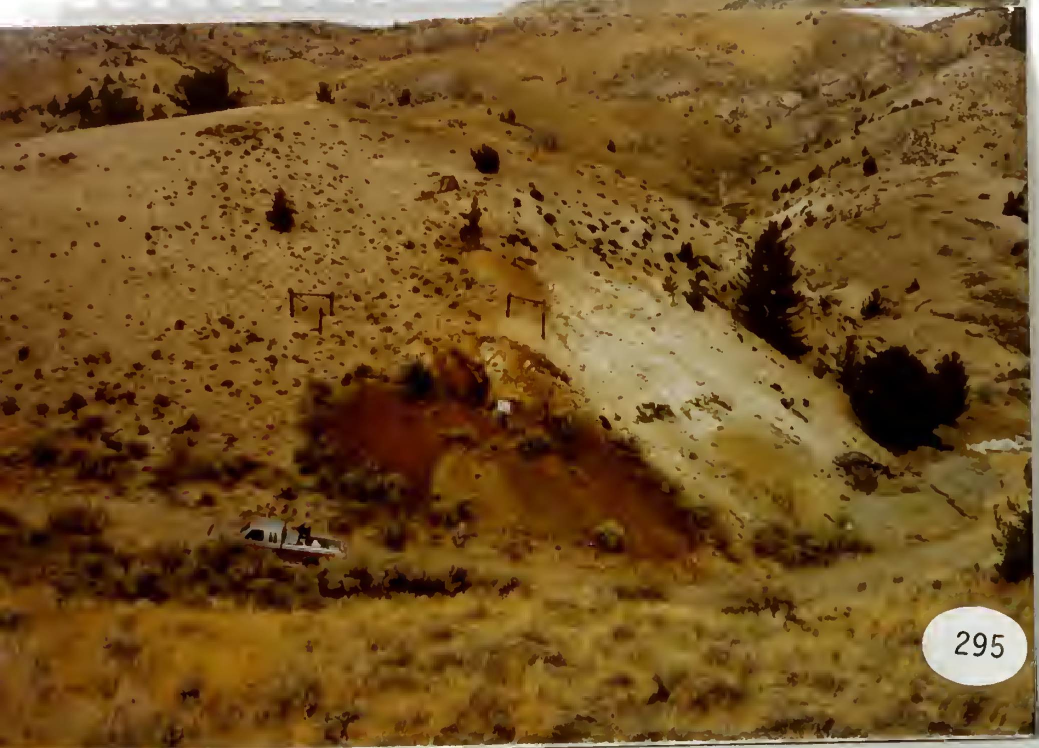
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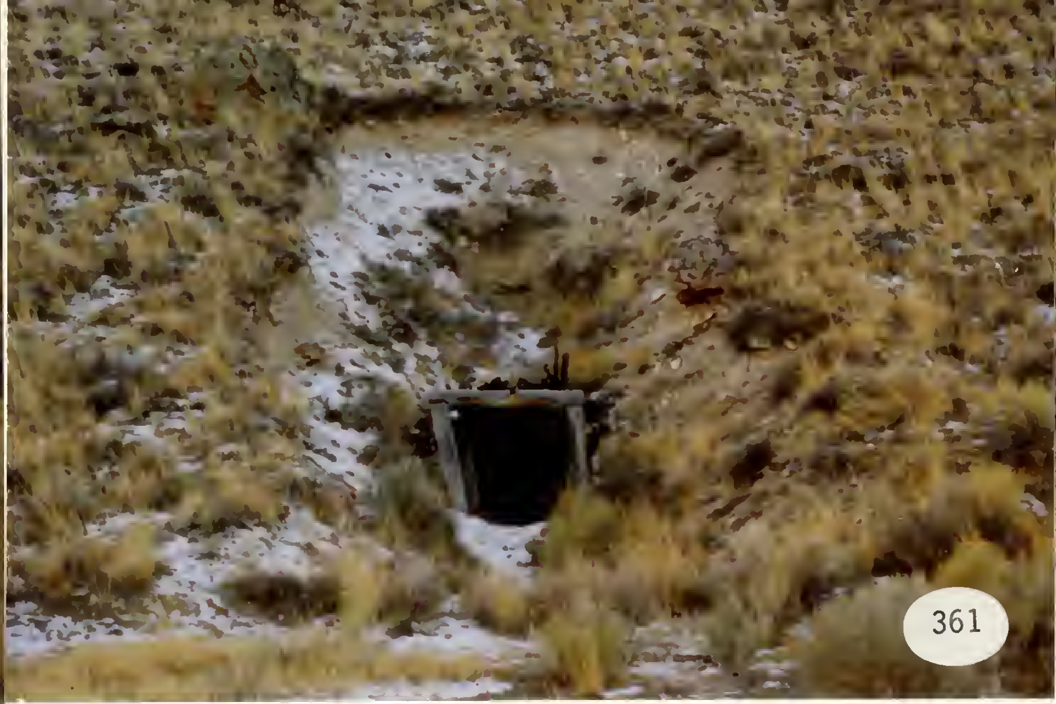
HILLSIDE
SITE
CONSTRUCTION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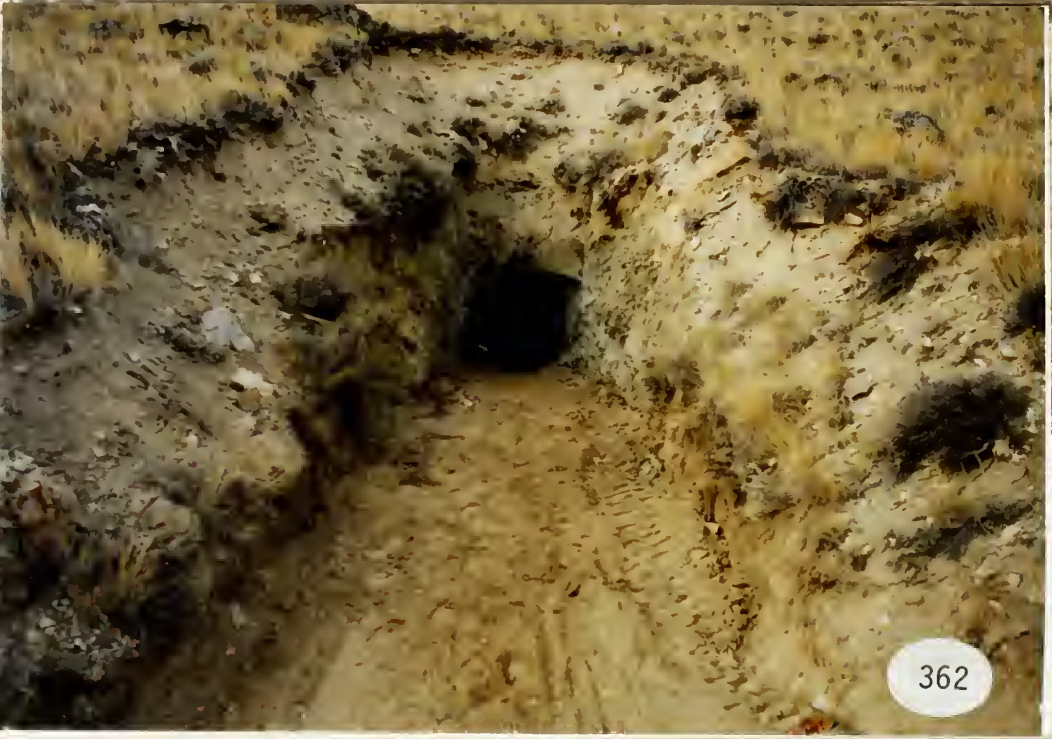
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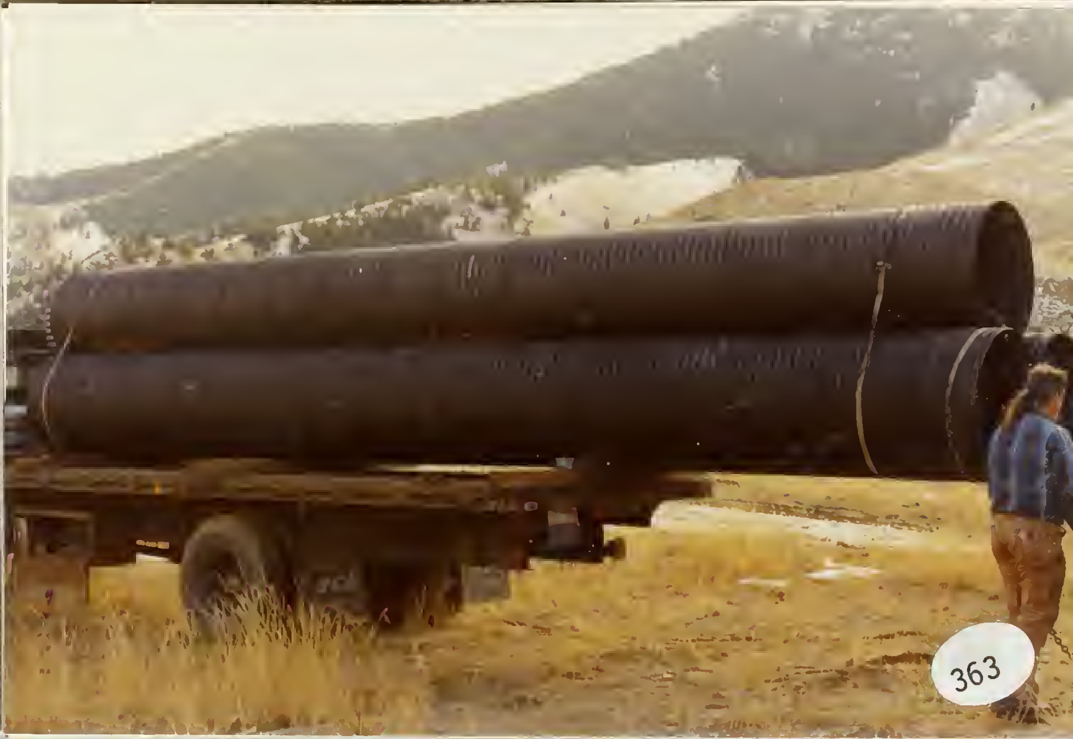
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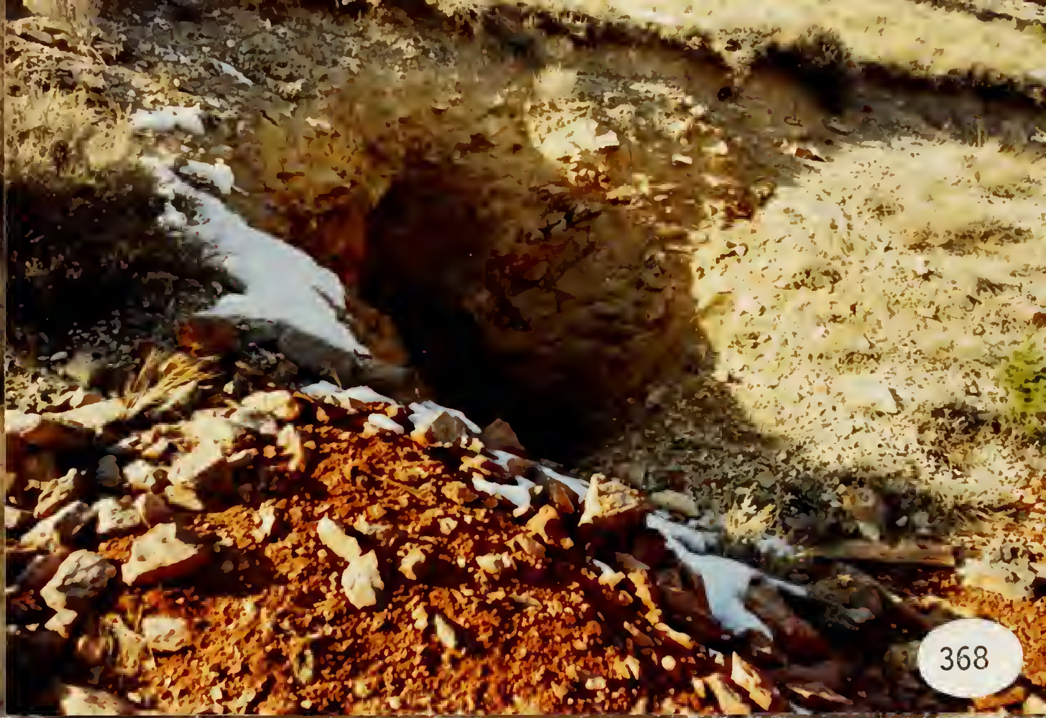
WADAMS
SITE
CONSTRUCTION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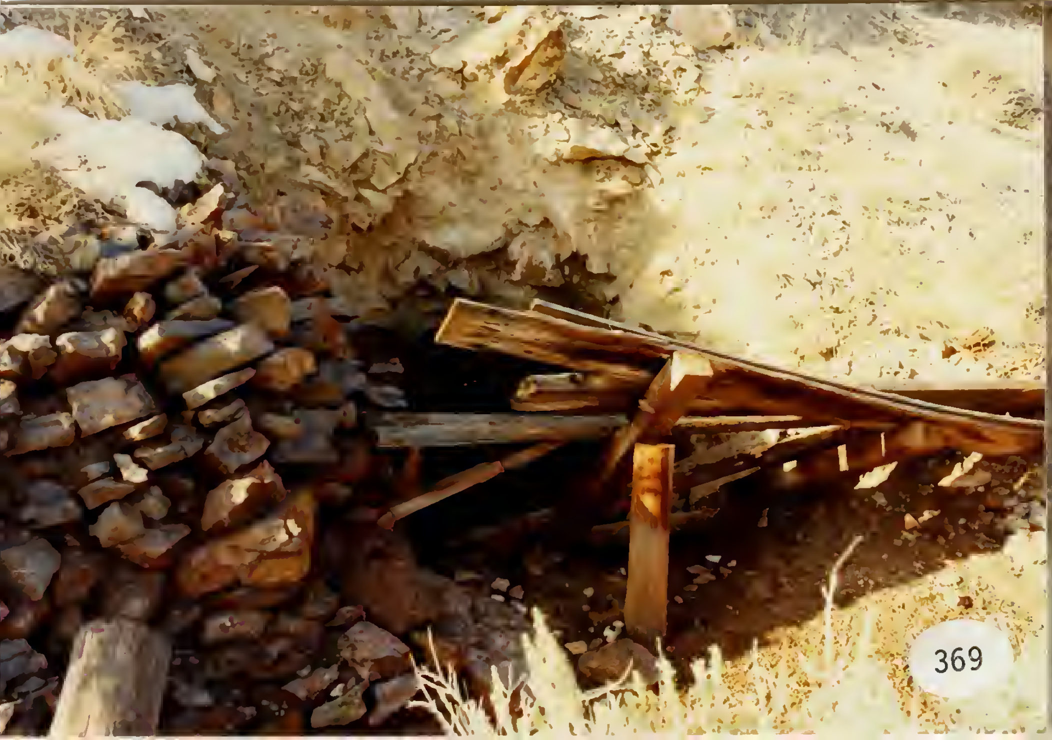
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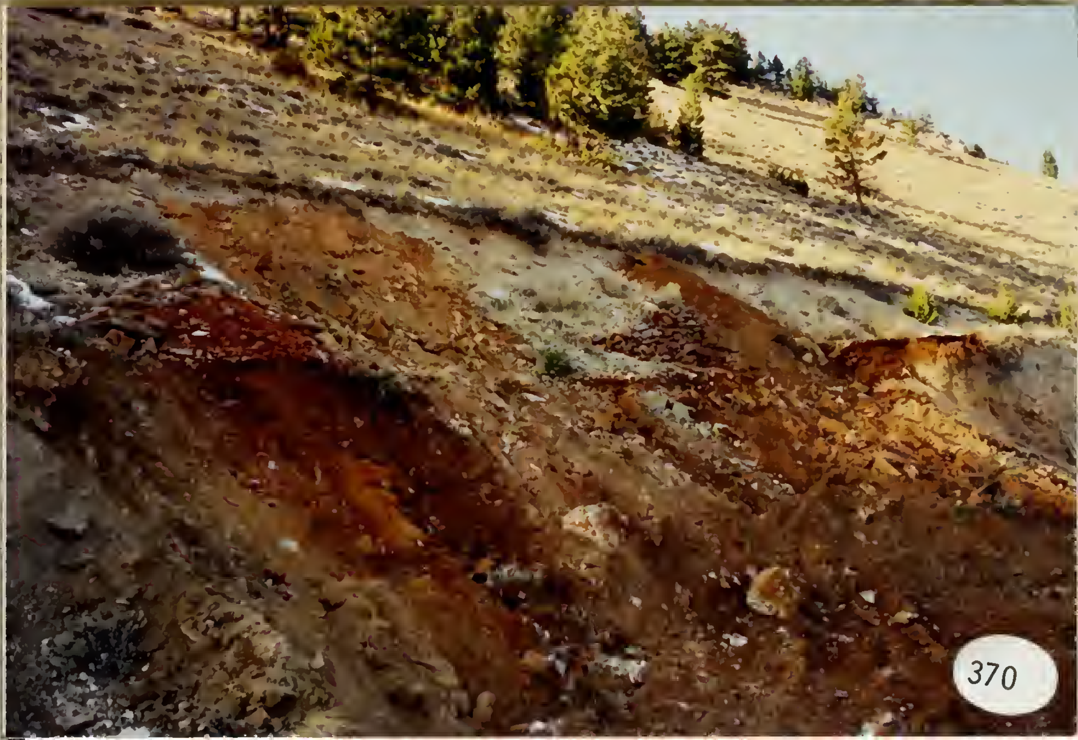
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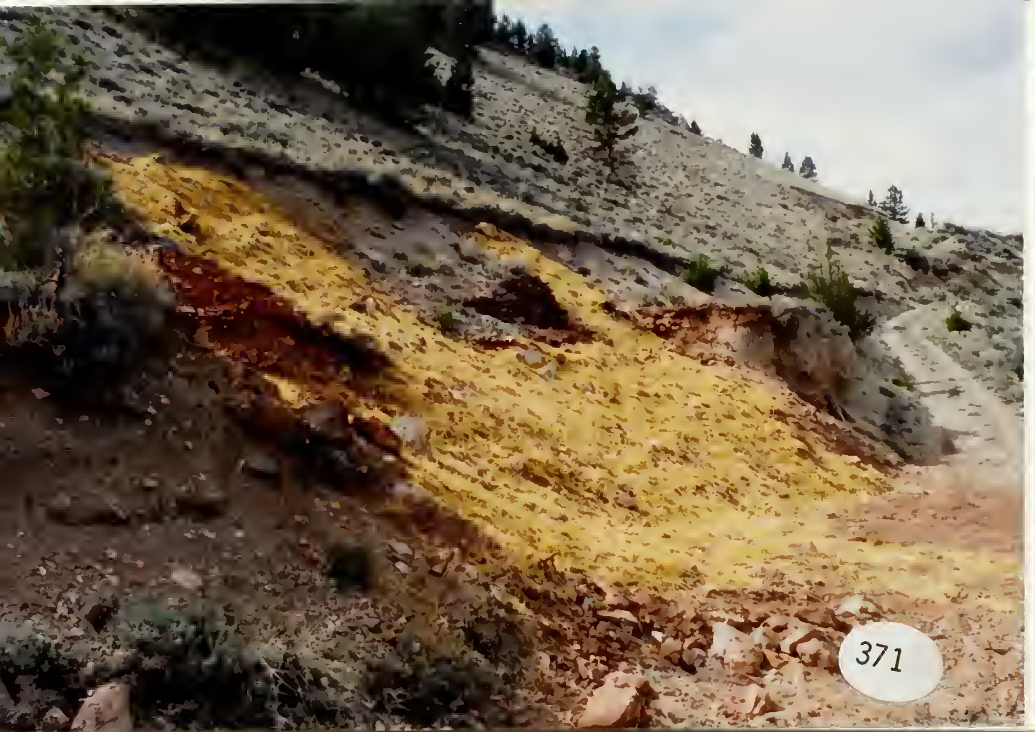

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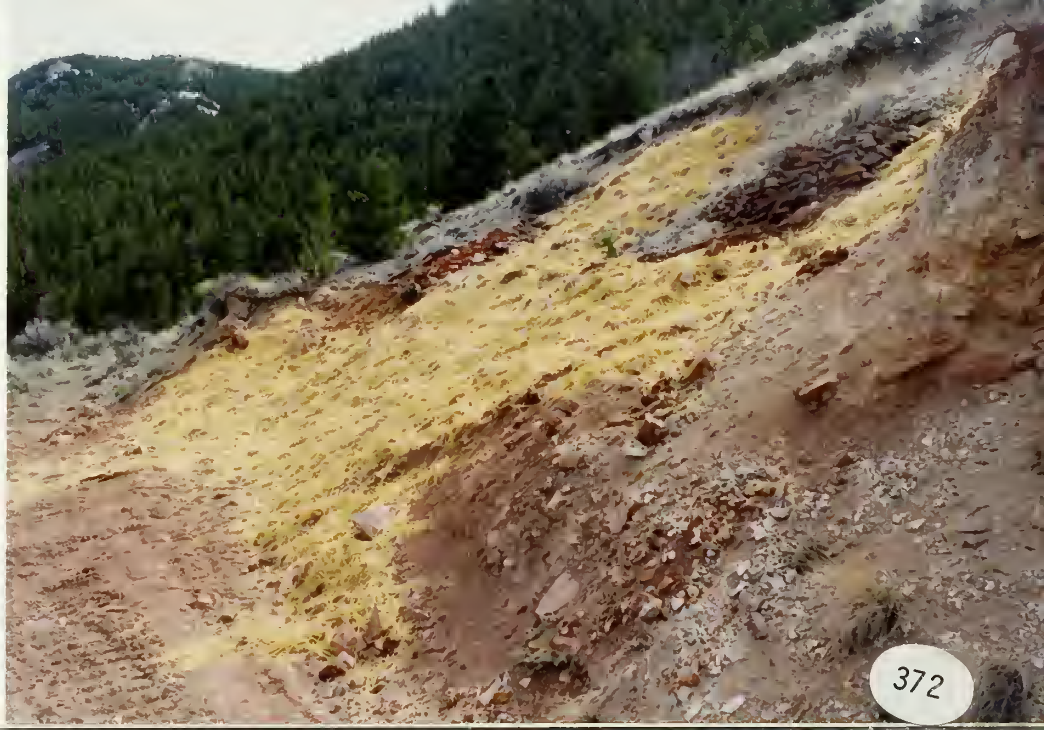

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Adams New

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FRENCH
SITE
CONSTRUCTION

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BOX X
SITE

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ATTACHMENT 1

BID TABULATIONS

BANNACK MINING DISTRICT PROJECT
BEAVERHEAD COUNTY, MONTANA

DSL/AMRB 91-007
DATE AUGUST 23, 1991

BID TABULATIONS				ENGINEER'S ESTIMATE		BAXTER CONSTRUCTION		JCT CONSTRUCTION		HIGH MOUNTAIN CONSTRUCTION, INC.	
Item Number	Estimated Quantity	Unit	Description	Unit Price	Total Price						
1.	1	LS	MOBILIZATION								
	1		HAND PLACER	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		SOUTHWEST SECTION 5	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		EAST HALF SECTION 5	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		BLUE GRASS	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		GOLD BUG	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		WASHINGTON	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		PIONEER	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		SENATOR	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		GOLDEN LEAF	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		HILLSIDE	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		WADAMS	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		FRENCH	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		BOX X	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		BON ACCORD	0.00	0.00	000.00	0.00	000.00	0.00	000.00	0.00
2.	1	LS	DEBRIS REMOVAL								
	1		HAND PLACER	600.00	600.00	100.00	100.00	1,000.00	1,000.00	500.00	500.00
	1		SOUTHWEST SECTION 5	1,000.00	1,000.00	300.00	300.00	1,500.00	1,500.00	1,000.00	1,000.00
	1		BLUE GRASS	900.00	900.00	100.00	100.00	1,500.00	1,500.00	300.00	300.00
	1		GOLD BUG	800.00	800.00	200.00	200.00	1,500.00	1,500.00	1,000.00	1,000.00
	1		SENATOR	400.00	400.00	100.00	100.00	1,000.00	1,000.00	300.00	300.00
	1		GOLDEN LEAF	1,200.00	1,200.00	500.00	500.00	1,200.00	1,200.00	2,000.00	2,000.00

BID TABULATIONS				ENGINEER'S ESTIMATE		BAXTER CONSTRUCTION		JCT CONSTRUCTION		HIGH MOUNTAIN CONSTRUCTION, INC.	
Item Number	Estimated Quantity	Unit	Description	Unit Price	Total Price						
	1		BOX X	1,000.00	1,000.00	60.00	60.00	900.00	900.00	300.00	300.00
3.	16.0	KGAL	PROVIDE WATER	40.00	640.00	20.00	320.00	160.00	2,560.00	112.50	1,800.00
4.	83	EACH	CLOSE MINE OPENINGS								
	9	EACH	HAND PLACER	350.00	3,150.00	200.00	1,800.00	500.00	4,500.00	450.00	4,050.00
	11	EACH	SOUTHWEST SECTION 5	1,500.00	16,500.00	300.00	3,300.00	1,000.00	11,000.00	575.00	6,325.00
	3	EACH	EAST HALF SECTION 5	750.00	2,250.00	300.00	900.00	500.00	1,500.00	2,100.00	6,300.00
	18	EACH	BLUE GRASS	500.00	9,000.00	400.00	7,200.00	500.00	9,000.00	700.00	12,600.00
	16	EACH	GOLD BUG	1,675.00	26,800.00	1,425.00	22,800.00	2,000.00	32,000.00	1,532.50	24,520.00
	3	EACH	WASHINGTON	700.00	2,100.00	300.00	900.00	2,000.00	6,000.00	520.00	1,560.00
	3	EACH	SENATOR	600.00	1,800.00	300.00	900.00	500.00	1,500.00	1,096.66	3,289.98
	9	EACH	GOLDEN LEAF	2,000.00	18,000.00	1,495.00	13,455.00	1,500.00	13,500.00	2,766.11	24,894.99
	5	EACH	WADAMS	2,000.00	10,000.00	1,995.00	9,975.00	2,400.00	12,000.00	2,016.00	10,080.00
	4	EACH	FRENCH	200.00	800.00	310.00	1,240.00	900.00	3,600.00	462.00	1,848.00
	1	EACH	BON X	700.00	700.00	300.00	300.00	1,200.00	1,200.00	2,180.00	2,180.00
	1	EACH	BON ACCORD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.	3	EACH	ROCK WALL ADIT CLOSURE								
	2	EACH	SOUTHWEST SECTION 5	800.00	1,600.00	300.00	600.00	4,000.00	8,000.00	1,360.00	2,720.00
	1	EACH	EAST HALF SECTION 5	800.00	800.00	300.00	300.00	3,500.00	3,500.00	900.00	900.00
6.	1	EACH	REINFORCED CONCRETE PLUG AT GOLDEN LEAF SITE	2,000.00	2,000.00	2,100.00	2,100.00	7,500.00	7,500.00	1,584.00	1,584.00
7.	3	EACH	ADIT AND SHAFT CULVERT ACCESS WITH LOCKING GRATE								
	1	EACH	PIONEER	3,000.00	3,000.00	1,357.50	1,357.50	2,500.00	2,500.00	2,052.00	2,052.00
	1	EACH	GOLDEN LEAF	3,000.00	3,000.00	1,613.25	1,613.25	2,500.00	2,500.00	2,000.00	2,000.00

BID TABULATIONS				ENGINEER'S ESTIMATE		BAXTER CONSTRUCTION		JCT CONSTRUCTION		HIGH MOUNTAIN CONSTRUCTION, INC.	
Item Number	Estimated Quantity	Unit	Description	Unit Price	Total Price						
	1	EACH	HILLSIDE	3,600.00	3,600.00	1,357.50	1,357.50	2,500.00	2,500.00	1,975.00	1,975.00
8.	2	EACH	INSTALL STEEL CURTAIN ACROSS ENTRANCE AND BACKFILL AGAINST IT								
	1	EACH	GOLD BUG	2,500.00	2,500.00	800.00	800.00	4,000.00	3,000.00	4,662.00	4,662.00
	1	EACH	WADAMS	3,000.00	3,000.00	800.00	800.00	4,000.00	4,000.00	4,662.00	4,662.00
9.	6	EACH	CONCRETE SECTION AND BEAM SHAFT CLOSURE AT WASHINGTON SITE	1,200.00	7,200.00	1,329.00	7,974.00	5,000.00	30,000.00	6,653.00	* 39,918.00
10.	4.93	ACRE	FERTILIZE, SEED & MULCH	3,000.00	14,790.00	1,500.00	7,395.00	5,000.00	24,650.00	1,963.48	9,679.96
11.	6	HUND.	WILLOW SALVAGE AND PLANTING AT BON ACCORD	0.00	0.00	0.00	0.00	000.00	0.00	0.00	0.00
ADJUSTED TOTAL FOR BANNACK MINING DISTRICT PROJECT					145,630.00		95,247.25		201,610.00		181,500.93
ORIGINAL BID PRICE					146,130.00		95,247.25		201,610.00		148,236.00

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BANNACK MINING DISTRICT PROJECT
BEAVERHEAD COUNTY, MONTANA

DSL/AMRB 91-007
DATE AUGUST 23, 1991

BID TABULATIONS				MERCILL INDUSTRIES, INC.		AJAX CONTRACTING, INC.		WESTERN STATES CONTRACTING, INC.		COLEMAN CONSTRUCTION, INC.	
Item Number	Estimated Quantity	Unit	Description								
1.	1	LS	MOBILIZATION	500.00							
	1		HAND PLACER	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		SOUTHWEST SECTION 5	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		EAST HALF SECTION 5	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		BLUE GRASS	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		GOLD BUG	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		WASHINGTON	500.00	500.00	600.00	600.00	500.00	500.00	500.00	500.00
	1		PIONEER	500.00	500.00	600.00	600.00	500.00	500.00	500.00	500.00
	1		SENATOR	500.00	500.00	600.00	600.00	500.00	500.00	500.00	500.00
	1		GOLDEN LEAF	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		HILLSIDE	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		WADAMS	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		FRENCH	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		BOX X	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
	1		BON ACCORD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.	1	LS	DEBRIS REMOVAL								
	1		HAND PLACER	675.00	675.00	2,000.00	2,000.00	350.00	350.00	500.00	500.00
	1		SOUTHWEST SECTION 5	2,025.00	2,025.00	5,000.00	5,000.00	1,050.00	1,050.00	1,500.00	1,500.00
	1		BLUE GRASS	675.00	675.00	2,000.00	2,000.00	350.00	350.00	500.00	500.00
	1		GOLD BUG	1,350.00	1,350.00	3,500.00	3,500.00	700.00	700.00	1,000.00	1,000.00
	1		SENATOR	675.00	675.00	2,000.00	2,000.00	350.00	350.00	500.00	500.00
	1		GOLDEN LEAF	3,375.00	3,375.00	6,000.00	6,000.00	1,750.00	1,750.00	4,000.00	4,000.00

BID TABULATIONS				MERCILL INDUSTRIES, INC.		AJAX CONTRACTING, INC.		WESTERN STATES CONTRACTING, INC.		COLEMAN CONSTRUCTION, INC.	
Item Number	Estimated Quantity	Unit	Description								
	1		BOX X	405.00	405.00	1,500.00	1,500.00	210.00	210.00	1,000.00	1,000.00
3.	16.0	KGAL	PROVIDE WATER	120.00	1,920.00	50.00	800.00	503.13	8,050.08	100.00	1,600.00
4.	83	EACH	CLOSE MINE OPENINGS								
	9	EACH	HAND PLACER	853.33	7,679.97	300.00	2,700.00	1,345.50	12,109.50	1,120.00	10,080.00
	11	EACH	SOUTHWEST SECTION 5	607.28	6,680.08	1,000.00	11,000.00	1,345.50	14,800.50	1,131.81	12,449.91
	3	EACH	EAST HALF SECTION 5	1,424.66	4,273.98	350.00	1,050.00	1,345.50	4,036.50	416.66	1,249.98
	18	EACH	BLUE GRASS	613.06	11,035.08	300.00	5,400.00	1,345.50	24,219.00	1,902.00	34,236.00
	16	EACH	GOLD BUG	2,820.88	45,134.08	1,900.00	30,400.00	3,704.15	59,266.40	1,067.50	17,080.00
	3	EACH	WASHINGTON	1,520.00	4,560.00	350.00	1,050.00	1,345.50	4,036.50	1,200.00	3,600.00
	3	EACH	SENATOR	1,411.66	4,234.98	750.00	2,250.00	1,345.50	4,036.50	833.33	2,499.99
	9	EACH	GOLDEN LEAF	2,631.11	23,679.99	3,000.00	27,000.00	3,704.15	33,337.35	1,742.22	15,679.98
	5	EACH	WADAMS	3,237.20	16,186.00	2,500.00	12,500.00	1,345.50	6,727.50	1,936.00	9,680.00
	4	EACH	FRENCH	1,020.00	4,080.00	500.00	2,000.00	1,345.50	5,382.00	750.00	3,000.00
	1	EACH	BON X	2,925.00	2,925.00	460.00	460.00	1,345.50	1,345.50	1,000.00	1,000.00
	1	EACH	BON ACCORD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.	3	EACH	ROCK WALL ADIT CLOSURE								
	2	EACH	SOUTHWEST SECTION 5	1,671.00	3,342.00	1,500.00	3,000.00	1,380.00	2,760.00	1,500.00	3,000.00
	1	EACH	EAST HALF SECTION 5	1,671.00	1,671.00	1,500.00	1,500.00	1,380.00	1,380.00	1,500.00	1,500.00
6.	1	EACH	REINFORCED CONCRETE PLUG AT GOLDEN LEAF SITE	1,900.00	1,900.00	6,000.00	6,000.00	3,220.00	3,220.00	1,400.00	1,400.00
7.	3	EACH	ADIT AND SHAFT CULVERT ACCESS WITH LOCKING GRATE								
	1	EACH	PIONEER	1,800.00	1,800.00	3,052.00	3,052.00	1,840.00	1,840.00	3,000.00	3,000.00
	1	EACH	GOLDEN LEAF	1,542.00	1,542.00	3,300.00	3,300.00	1,840.00	1,840.00	3,000.00	3,000.00

BID TABULATIONS				MERCILL INDUSTRIES, INC.		AJAX CONTRACTING, INC.		WESTERN STATES CONTRACTING, INC.		COLEMAN CONSTRUCTION, INC.	
Item Number	Estimated Quantity	Unit	Description								
	1	EACH	HILLSIDE	2,100.00	2,100.00	3,052.00	3,052.00	1,840.00	1,840.00	3,000.00	3,000.00
8.	2	EACH	INSTALL STEEL CURTAIN ACROSS ENTRANCE AND BACKFILL AGAINST IT								
	1	EACH	GOLD BUG	1,800.00	1,800.00	5,000.00	5,000.00	2,760.00	2,760.00	3,000.00	3,000.00
	1	EACH	WADAMS	1,800.00	1,800.00	6,000.00	6,000.00	2,760.00	2,760.00	3,000.00	3,000.00
9.	6	EACH	CONCRETE SECTION AND BEAM SHAFT CLOSURE AT WASHINGTON SITE	1,900.00	11,400.00	495.00	2,970.00	1,528.35	9,170.10	1,200.00	7,200.00
10.	4.93	ACRE	FERTILIZE, SEED & MULCH	300.00	1,479.00	1,500.00	7,395.00	350.75	1,729.20	1,500.00	7,395.00
11.	6	HUND.	WILLOW SALVAGE AND PLANTING AT BON ACCORD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ADJUSTED TOTAL FOR BANNACK MINING DISTRICT PROJECT					176,903.16		166,679.00		217,906.63		163,150.86
ORIGINAL BID PRICE					160,903.15		171,179.00		218,506.63		156,655.00

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ATTACHMENT 2

CHANGE ORDERS

CHANGE ORDER

ORDER NO: 1

PROJECT TITLE: BANNACK MINING DISTRICT

MONT A/E or DSL-AMRB: 91-007

CONTRACT DATE: SEPTEMBER 23, 1991

OWNER: STATE OF MONTANA - ABANDONED MINE LAND BUREAU

CONTRACTOR: BAXTER CONSTRUCTION

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	TOTAL UNIT COST	
4.	Close Mine Opening - 1 each	-Contract Unit Price Bid-				400	400
10.	Fertilize, Seed & Mulch 0.09 Acres	- Contract Unit Price Bid-				1500	~~1500~~ 135 DH

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC.	NA
OVERHEAD & PROFIT @ ______%	NA
GRAND TOTAL - THIS CHANGE ORDER	535.00

Original Contract Price	95,247.25
Current Contract Price Adjusted by Previous Change Order	95,247.25
Cost this Change Order (+ or -_)	535.00
New Contract Price including this Change Order	95,782.25

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 116 calendar days.

The date for completion of all work will be May 3, 1992.

Description and Justification for Change:

1. Work Completion date adjusted to May 3, 1992 to account for winter weather causing 16 days of work stoppage and for a winter shut-down of 100 days.

2. During construction an additional 15-foot deep mine shaft was located across the drainage from the Blue Grass Site. This opening will require 80 cubic yards of fill. There is no adjacent borrow source. The contractor was offered his unit mine closure price for other Bluegrass Mine openings.

3. The mine closure area, access development and borrow area for the additional mine closure near the Bluegrass Site will require seed, fertilizer and mulch. It is estimated that 0.09 acres will be reclaimed at the contractors unit price for this item.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by $________ (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by $________ (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA RESIDENT AGENT

F&S Insurance Montana, Inc.
F&S Insurance - Billings
Countersigned By:
Dennis P. Gambill
Montana Resident Agent

SURETY

TRANSAMERICA PREMIER INSURANCE COMPANY

By: Dennis P. Gambill
Seal
Dennis P. Gambill

Recommended by: David M. Mugya — Engineer — Date: 4-16-92

Accepted by: Ed Baxter Baxter Const. — Contractor — Date: 4-16-92

Approved by: Bonnie Lovelace — Owner — Date: 4-20-92

CHANGE ORDER

ORDER NO. 2

PROJECT TITLE BANNACK MINING DISTRICT

MONT A/E or DSL-AMRB 91-007

CONTRACT DATE SEPTEMBER 23, 1991

OWNER STATE OF MONTANA - ABANDONED MINE BUREAU

CONTRACTOR BAXTER CONSTRUCTION

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	TOTAL UNIT COST	
4	CLOSE MINE OPENING						
	HAND INCLINE 1 EACH					300	300
	GOLD BUG ADIT 1 EACH					500	500
10	FERTILIZE, SEED, AND MULCH 0.07 ACRES					1500	105
12	SEED AND FERTILIZE 0.33 ACRES					450	150

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC	NA
OVERHEAD & PROFIT @ _______ %	NA
GRAND TOTAL - THIS CHANGE ORDER	$1,055.00

Original Contract Price	$95,247.25
Current Contract Price Adjusted by Previous Change Order	95,782.25
Cost this Change Order (+ or -)	+ 1,055.00
New Contract Price including this Change Order	$96,837.25

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 0 calendar days.

The date for completion of all work will be MAY 3, 1992.

Description and Justification for Change:

1. During the Final Inspection one additional inclined opening was found at the Hand Placer Site. This opening will be caved and backfilled. A small portion of the site will be regraded. A lump sum price of $300.00 was negotiated for this closure.

2. During the Final Inspection an additional horizontal opening was located at the Gold Bug Site near DM 46. A substantial earthen plug will be installed in the entrance to this adit. In additon to backfilling, work will include grading the exposed portion of the plug, access disturbance and the borrow area. A lump sum price of $500.00 was negotiated for this closure.

3. The disturbed areas associated with items 1 and 2 will be seeded, fertilized and mulched for the contract unit price.

4. The Wadams Site DM 53 will be seeded and fertilized for a unit price of $450/AC Approximately 0.33 acres are involved.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by $________ (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by $________ (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA RESIDENT AGENT

FBS Insurance Montana, Inc.
FBS Insurance Billings
Countersigned by
Dennis D.
~~Montana Resident Agent~~

SURETY TRANSAMERICA PREMIER INSURANCE COMPANY

Dennis D.

By:

Seal

Recommended by: David M. — Engineer — April 29, 1992 — Date

Accepted by: Ed Baxter Baxter Const. — Contractor — Apr. 29, 1992 — Date

Approved by: Bonnie Lovelace — Owner — 5-18-92 — Date

DN

CHANGE ORDER

ORDER NO: 3

PROJECT TITLE: BANNACK MINING DISTRICT

MONT A/E or DSL-AMRB: 91-007

CONTRACT DATE: SEPTEMBER 23, 1991

OWNER: STATE OF MONTANA - ABANDONED MINE LAND BUREAU

CONTRACTOR: BAXTER CONSTRUCTION

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	TOTAL UNIT COST	
10	FERTILIZE, SEED & MULCH 0.78 ACRES	- CONTRACT UNIT PRICE BID				1500	1170
	TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC.						
	OVERHEAD & PROFIT @ ______%						
	GRAND TOTAL - THIS CHANGE ORDER						$1,170.00

Original Contract Price	$95,247.25
Current Contract Price Adjusted by Previous Change Order	96,837.25
Cost this Change Order (+ or -_)	- 1,170.00
New Contract Price including this Change Order	$95,667.25

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 0 calendar days.

The date for completion of all work will be MAY 3,1992.

Description and Justification for Change:

1. The engineering estimate for non-access related revegetation acreage was 4.93 acres. An additional 0.16 acres of revegetation was added by change orders for 3 additional openings. Total revegetated acreage measured for payment was 4.31 acres. Item 10 is therefore adjusted to reduce the acreage (4.93 + 0.16 - 4.31) by 0.78 acres

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SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by $________ (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by $________ (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA RESIDENT AGENT

FBS Insurance Montana, Inc.
FBS Insurance Billings
Countersigned by:
Montana Resident Agent

SURETY

TRANSAMERICA PREMIER INSURANCE COMPANY

By:
Seal

Recommended by: David M. Murja — Engineer — May 7, 1992 — Date

Accepted by: Ed Baxter Baxter Const. — Contractor — May 7, 1992 — Date

Approved by: Bonnie Lovelace — Owner DH — 5-18-92 — Date

ATTACHMENT 3

PAYMENT REQUESTS

RECEIVED
NOV 12 1991
STATE LANDS

PAYMENT REQUEST NO. 1

FROM October 15,1991 TO October 27, 1991

PROJECT TITLE: Bannack Mining District

LOCATION: Beaverhead County MONT A/E or DSL-AMRB: 91-007

NAME OF CONTRACTOR: Baxter Construction

ADDRESS: 4014 Hardin Road, Billings, MT 59101

SUMMARY OF PROJECT STATUS

Amount of Original Contract		$ 95,247.25
Change Order No. ____	$	
Change Order No. ____	$	
Change Order No. ____	$	
Amount of Approved Change Order(s)		$
TOTAL CONTRACT AMOUNT		$ 95,247.25

Pay Request No.	Amount of Request
1	~~$ 20,290.00~~ 18,261

MBL

Total Contract Amount Completed to Date	$ 20,290.00
Less Retainage (10.00 %)	$ 2,029.00
TOTAL AMOUNT EARNED TO DATE	$ 18,261.00
Less Previous Payments	$ 0.00
AMOUNT DUE THIS PAYMENT	$ 18,261.00
Less 1% Tax	$ 182.61
TOTAL DUE CONTRACTOR	$ 18,078.39

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

Willie E. Baxter Construction
Contractor

By Ed Baxter

Date 11 - 7 - 91

RECOMMENDED BY:

Spectrum Engineering
Engineer

By David M. [illegible]

Date 11-7-91

APPROVED BY:

Dept. of State Lands, Abandoned Mine Reclamation Bureau
Owner

By Edward C. Gensler DH

Date Nov 15, 1991

Item No.	Description	Contract Quantity	Contract Unit Price	Previous Quantity Requested	Current Quantity Completed	Total Quantity Completed To Date	Total Contract Amount Completed to Date	Amount Due this Payment
1.	Mobilization	1		0	30.8%	30.8%		
	Southwest Section 5		500.00	0			500.00	500.00
	East Half Section 5		500.00	0			500.00	500.00
	Blue Grass		500.00	0			500.00	500.00
	Golden Leaf		500.00	0			500.00	500.00
2.	Debris Removal	1	300.00	0	22.1%	22.1%	300.00	300.00
	Southwest Section 5							
4.	Close Mine Openings	83		0	36.0%	36.0%		
	Hand	9	200.00	0	1	1	200.00	200.00
	Southwest Section 5	11	300.00	0	11	11	3300.00	3300.00
	East Half Section 5	3	300.00	0	2	2	600.00	600.00
	Blue Grass	18	400.00	0	16	16	6400.00	6400.00
	Gold Bug	16	1425.00	0	1	1	1425.00	1425.00
	Washington	3	300.00	0	2	2	600.00	600.00
	Senator	3	300.00	0	1	1	300.00	300.00
	Golden Leaf	9	1495.00	0	2	2	2990.00	2990.00
5.	Rock Wall Adit Colsure	3						
	Southwest Section 5 (Closure Tech Substituted)	2	300.00	0	2	2	600.00	600.00
10.	Fertilize, Seed and Mulch	4.93	1500.00	0	1.05	1.05	1575.00	1575.00
	Materials on Site (Attach Schedule)							
TOTAL							$20,290.00	$20,290.00

PAYMENT REQUEST NO. 2

FROM October 28,1991 TO November 18, 1991

PROJECT TITLE: Bannack Mining District

LOCATION: Beaverhead County MONT A/E or DSL-AMRB: 91-007

NAME OF CONTRACTOR: Baxter Construction

ADDRESS: 4014 Hardin Road, Billings, MT 59101

SUMMARY OF PROJECT STATUS

Amount of Original Contract		$ 95,247.25
Change Order No. ____	$	
Change Order No. ____	$	
Change Order No. ____	$	
Amount of Approved Change Order(s)		$
TOTAL CONTRACT AMOUNT		$ 95,247.25

Pay Request No.	Amount of Request
1	$ 18,261.00
2	$ 25,328.72

Total Contract Amount Completed to Date	$ 48,433.02
Less Retainage (10.00 %)	$ 4,843.30
TOTAL AMOUNT EARNED TO DATE	$ 43,589.72
Less Previous Payments	$ 18,261.00
AMOUNT DUE THIS PAYMENT	$ 25,328.72
Less 1% Tax	$ 253.29
TOTAL DUE CONTRACTOR	$ 25,075.43

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

Willie E. Baxter Construction
Contractor

By Ed Baxter

Date 12 - 12 - 91

RECOMMENDED BY:

Spectrum Engineering
Engineer

By David M. Murja

Date 12-16-91

APPROVED BY:

Dept. of State Lands, Abandoned Mine Reclamation Bureau
Owner

By Edward C. Sensel

Date Nov 18, 1991

DH 12/18

Item No.	Description	Contract Quantity	Contract Unit Price	Previous Quantity Requested	Current Quantity Completed	Total Quantity Completed To Date	Total Contract Amount Completed to Date	Amount Due this Payment
1.	Mobilization	Sum		30.8%	46.2%	77.0%		
	Hand Placer	1	500.00	0	1	1	500.00	500.00
	Southwest Section 5	1	500.00	1	0	1	500.00	
	East Half Section 5	1	500.00	1	0	1	500.00	
	Blue Grass	1	500.00	1	0	1	500.00	
	Gold Bug	1	500.00	0	0	0	0	
	Washington	1	500.00	0	0	0	0	
	Pioneer	1	500.00	0	1	1	500.00	500.00
	Senator	1	500.00	0	1	1	500.00	500.00
	Golden Leaf	1	500.00	1	0	1	500.00	
	Hillside	1	500.00	0	1	1	500.00	500.00
	Wadams	1	500.00	0	1	1	500.00	500.00
	French	1	500.00	0	1	1	500.00	500.00
	Box X	1	500.00	0	0	0	0	
2.	Debris Removal	Sum		22.1%	58.8%	80.9%		
	Hand Placer	1	100.00	0	1	1	100.00	100.00
	Southwest Section 5	1	300.00	1	0	1	300.00	
	Blue Grass	1	100.00	0	1	1	100.00	100.00
	Gold Bug	1	200.00	0	0	0	0	
	Senator	1	100.00	0	1	1	100.00	100.00
	Golden Leaf	1	500.00	0	1	1	500.00	500.00
	Box X	1	60.00	0	0	0	0	
4.	Close Mine Openings	83		36	17	53		
	Hand	9	200.00	1	6	7	1400.00	1200.00
	Southwest Section 5	11	300.00	11	0	11	3300.00	
	East Half Section 5	3	300.00	2	0	2	600.00	
	Blue Grass	18	400.00	16	0	16	6400.00	
	Gold Bug	16	1425.00	1	0	1	1425.00	
	Washington	3	300.00	2	0	2	600.00	
	Senator	3	300.00	1	2	3	900.00	600.00
	Golden Leaf	9	1495.00	2	0	2	2990.00	
	Wadams	5	1995.00	0	5	5	9975.00	9975.00
	French	4	310.00	0	4	4	1240.00	1240.00
	Box X	1	300.00	0	0	0	0	
5.	Rock Wall Adit Colsure	3		2	0	2		
	Southwest Section 5	2	300.00	2	0	2	600.00	
	East Half Section 5	1	300.00	0	0	0	0	
7.	Adit Culvert w\ Acc. Grate	3		0	all partial	all partial		
	Pioneer	1	1357.50	0	0.85	0.85	1153.88	1153.88
	Golden Leaf	1	1613.25	0	0.85	0.85	1371.26	1371.26
	Hillside	1	1357.50	0	0.85	0.85	1153.88	1153.88
8.	Curtain Entrance & Backfill	2		0	1	1		
	Gold Bug	1	800.00	0	0	0	0	
	Wadams	1	800.00	0	1	1	800.00	800.00
10.	Fertilize, Seed and Mulch	4.93	1500.00	1.05	0	1.05	1575.00	
	Materials on Site (Attach Schedule)						6849.00	6849.00
TOTAL							$48,433.02	$28,143.02

PAYMENT REQUEST NO. 3

FROM November 19,1991 TO April 8, 1992

PROJECT TITLE: Bannack Mining District

LOCATION: Beaverhead County MONT A/E or DSL-AMRB: 91-007

NAME OF CONTRACTOR: Baxter Construction

ADDRESS: 4014 Hardin Road, Billings, MT 59101

SUMMARY OF PROJECT STATUS

Amount of Original Contract $ 95,247.25

Change Order No. ____ $

Change Order No. ____ $

Change Order No. ____ $

Amount of Approved Change Order(s) $

TOTAL CONTRACT AMOUNT $ 95,247.25

Pay Request No.	Amount of Request
1	$ 18,261.00
2	$ 25,328.72
3	$ 37,655.30

Total Contract Amount Completed to Date $ 90,272.25

Less Retainage (10.00 %) $ 9,027.23

TOTAL AMOUNT EARNED TO DATE $ 81,245.02

Less Previous Payments $ 43,589.72

AMOUNT DUE THIS PAYMENT $ 37,655.30

Less 1% Tax $ 376.55

TOTAL DUE CONTRACTOR $ 37,278.75

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

Willie E. Baxter Construction
Contractor

By Edward Baxter

Date 4-16-92

RECOMMENDED BY:

Spectrum Engineering
Engineer

By David M. [illegible]

Date 4-16-92

APPROVED BY:

Dept. of State Lands, Abandoned Mine Reclamation Bureau
Owner

By Bonnie Lovelace

Date 4-20-92

DN 4/20

Item No.	Description	Contract Quantity	Contract Unit Price	Previous Quantity Requested	Current Quantity Completed	Total Quantity Completed To Date	Total Contract Amount Completed to Date	Amount Due this Payment
1	Mobilization	Sum		77.0%	15.4%	92.4%		
	Hand Placer	1	500.00	1	0	1	500.00	
	Southwest Section 5	1	500.00	1	0	1	500.00	
	East Half Section 5	1	500.00	1	0	1	500.00	
	Blue Grass	1	500.00	1	0	1	500.00	
	Gold Bug	1	500.00	0	1	1	500.00	500.00
	Washington	1	500.00	0	1	1	500.00	500.00
	Pioneer	1	500.00	1	0	1	500.00	
	Senator	1	500.00	1	0	1	500.00	
	Golden Leaf	1	500.00	1	0	1	500.00	
	Hillside	1	500.00	1	0	1	500.00	
	Wadams	1	500.00	1	0	1	500.00	
	French	1	500.00	1	0	1	500.00	
	Box X	1	500.00	0	0	0	0	
2.	Debris Removal	Sum		80.9%	14.7%	95.6%		
	Hand Placer	1	100.00	1	0	1	100.00	
	Southwest Section 5	1	300.00	1	0	1	300.00	
	Blue Grass	1	100.00	1	0	1	100.00	
	Gold Bug	1	200.00	0	1	1	200.00	200.00
	Senator	1	100.00	1	0	1	100.00	
	Golden Leaf	1	500.00	1	0	1	500.00	
	Box X	1	60.00	0	0	0	0	
4	Close Mine Openings	82		53	28	81		
	Hand	9	200.00	7	2	9	1800.00	400.00
	Southwest Section 5	11	300.00	11	0	11	3300.00	
	East Half Section 5	3	300.00	2	1	3	900.00	300.00
	Blue Grass	18	400.00	16	2	18	7200.00	800.00
	Gold Bug	16	1425.00	1	15	16	22800.00	21375.00
	Washington	3	300.00	2	1	3	900.00	300.00
	Senator	3	300.00	3	0	3	900.00	
	Golden Leaf	9	1495.00	2	7	9	13455.00	10465.00
	Wadams	5	1995.00	5	0	5	9975.00	
	French	4	310.00	4	0	4	1240.00	
	Box X	1	300.00	0	0	0	0	
5.	Rock Wall Adit Closure	3		2	0	2		
	Southwest Section 5	2	300.00	2	0	2	600.00	
	East Half Section 5	1	300.00	0	0	0	0	
6.	Reinforced Concrete Plug	1	2100.00	0	0	0	0	
7.	Adit Culvert w/ Acc. Grate	3		2.55	0.45	3		
	Pioneer	1	1357.50	0.85	0.15	0.85	1357.50	203.62
	Golden Leaf	1	1613.25	0.85	0.15	0.85	1613.25	241.99
	Hillside	1	1357.50	0.85	0.15	0.85	1357.50	203.62
8.	Curtain Entrance & Backfill	2		1	1	2		
	Gold Bug	1	800.00	0	1	1	800.00	
	Wadams	1	800.00	1	0	1	800.00	800.00
9.	Concrete Section Shaft Closure	6	1329.00	0	6	6	7974.00	7974.00
10.	Fertilize, Seed and Mulch	4.93	1500.00	1.05	2.95	4.00	6000.00	4425.00
	Materials on Site (Prepaid)							-6849.00
TOTAL							$90,272.25	$41,839.23

PAYMENT REQUEST NO. 4

FROM April 9,1992 TO April 30, 1992

PROJECT TITLE: Bannack Mining District

LOCATION: Beaverhead County MONT A/E or DSL-AMRB: 91-007

NAME OF CONTRACTOR: Baxter Construction

ADDRESS: 4014 Hardin Road, Billings, MT 59101

SUMMARY OF PROJECT STATUS

Amount of Original Contract		$ 95,247.25
Change Order No. 1	$ + 535.00	
Change Order No. 2	$ +1,055.00	
Change Order No. 3	$ -1,170.00	
Amount of Approved Change Order(s)		$ + 420.00
TOTAL CONTRACT AMOUNT		$ 95,667.25

Pay Request No.	Amount of Request
1	$ 18,261.00
2	$ 25,328.72
3	$ 37,655.30
4	$ 14,422.23

Total Contract Amount Completed to Date	$ 95,667.25
Less Retainage (00.00 %)	$ 00.00
TOTAL AMOUNT EARNED TO DATE	$ 95,667.25
Less Previous Payments	$ 81,245.02
AMOUNT DUE THIS PAYMENT	$ 14,422.23
Less 1% Tax	$ 144.22
TOTAL DUE CONTRACTOR	$ 14,278.01

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

Willie E. Baxter Construction
Contractor

By Ed Baxter

Date May 7, 1992

RECOMMENDED BY:

Spectrum Engineering
Engineer

By David M. Murja

Date May 7, 1992

APPROVED BY:

Dept. of State Lands, Abandoned Mine Reclamation Bureau
Owner

By Bonnie Lovelace DH

Date 5-18-92

Item No.	Description	Contract Quantity	Contract Unit Price	Previous Quantity Requested	Current Quantity Completed	Total Quantity Completed To Date	Total Contract Amount Completed to Date	Amount Due this Payment
1.	Mobilization	Sum		92.4%	7.6%	100.0%		
	Hand Placer	1	500.00	1	0	1	500.00	
	Southwest Section 5	1	500.00	1	0	1	500.00	
	East Half Section 5	1	500.00	1	0	1	500.00	
	Blue Grass	1	500.00	1	0	1	500.00	
	Gold Bug	1	500.00	1	0	1	500.00	
	Washington	1	500.00	1	0	1	500.00	
	Pioneer	1	500.00	1	0	1	500.00	
	Senator	1	500.00	1	0	1	500.00	
	Golden Leaf	1	500.00	1	0	1	500.00	
	Hillside	1	500.00	1	0	1	500.00	
	Wadams	1	500.00	1	0	1	500.00	
	French	1	500.00	1	0	1	500.00	
	Box X	1	500.00	0	1	1	500.00	500.00
2.	Debris Removal	Sum		95.6%	4.4%	100.0%		
	Hand Placer	1	100.00	1	0	1	100.00	
	Southwest Section 5	1	300.00	1	0	1	300.00	
	Blue Grass	1	100.00	1	0	1	100.00	
	Gold Bug	1	200.00	1	0	1	200.00	
	Senator	1	100.00	1	0	1	100.00	
	Golden Leaf	1	500.00	1	0	1	500.00	
	Box X	1	60.00	0	1	1	60.00	60.00
3	Provide Water	16	20.00	0	16	16	320.00	320.00
4.	Close Mine Openings	85		81	4	85		
	Hand	9	200.00	9	0	9	1800.00	
	Southwest Section 5	11	300.00	11	0	11	3300.00	
	East Half Section 5	3	300.00	3	0	3	900.00	
	Blue Grass	18	400.00	18	0	18	7200.00	
	Gold Bug	16	1425.00	16	0	16	22800.00	
	Washington	3	300.00	3	0	3	900.00	
	Senator	3	300.00	3	0	3	900.00	
	Golden Leaf	9	1495.00	9	0	9	13455.00	
	Wadams	5	1995.00	5	0	5	9975.00	
	French	4	310.00	4	0	4	1240.00	
	Box X	1	300.00	0	1	1	300.00	300.00
	Add. Blue Grass Shaft	1	400.00	0	1	1	400.00	400.00
	Add. Hand Incline	1	300.00	0	1	1	300.00	300.00
	Add. Gold Bug Adit	1	500.00	0	1	1	500.00	500.00
5.	Rock Wall Adit Closure	3		2	1	3		
	Southwest Section 5	2	300.00	2	0	2	600.00	
	East Half Section 5	1	300.00	0	1	1	300.00	300.00
6.	Reinforced Concrete Plug	1	2100.00	0	1	1	2100.00	2100.00
7	Adit Culvert w/ Acc. Grate	3		3	0	3		
	Pioneer	1	1357.50	1	0	1	1357.50	
	Golden Leaf	1	1613.25	1	0	1	1613.25	
	Hillside	1	1357.50	1	0	1	1357.50	
8.	Curtain Entrance & Backfill	2		2	0	2		
	Gold Bug	1	800.00	1	0	1	800.00	
	Wadams	1	800.00	1	0	1	800.00	
9.	Concrete Section Shaft Closure	6	1329.00	1	0	6	7974.00	
10.	Fertilize, Seed and Mulch	4.31	1500.00	4.00	0.31	4.31	6465.00	465.00
12.	Add. Seed and Fertilize DM53	0.33	450.00	0	0.33	0.33	150.00	150.00
	Materials on Site							
TOTAL							$95,667.25	$ 5,395.00

ATTACHMENT 4

ANALYSIS OF CONSULTANT COSTS INCURRED

ANALYSIS OF CONSULTANT COSTS INCURRED
FOR THE MONTANA DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU
AMR PROJECT NUMBER: DSL-AMRB 91-007
BANNACK MINING DISTRICT PROJECT

DATE OF PREPARATION: June 15TH, 1992

ENGINEERING SERVICE	AMOUNT
DESIGN ENGINEERING:	
JULY 1990-JUNE 1991 CONTRACT	$83,742.48
1990-91 CONTRACT EXTENSION FOR 1991-92	$ 8,638.88
SUBTOTAL DESIGN ENGINEERING COST:	$92,381.36
CONSTRUCTION ENGINEERING AND PROJECT ADMINISTRATION COST:	
1990-91 CONTRACT EXTENSION FOR 1991-92	$35,205.21
SUBTOTAL CONSTRUCTION ENGINEERING COST:	$35,205.21
PROJECT ENGINEERING COST:	$127,586.57
CONSTRUCTION COST:	$95,667.25

PERCENTAGE ENGINEERING FEES TO CONSTRUCTION COST:

DESIGN ENGINEERING/CONSTRUCTION COST	96.6%
CONSTRUCTION ENGINEERING/CONSTRUCTION COST	36.8%
TOTAL ENGINEERING COST/CONSTRUCTION COST	133.4%

REMARKS: Services provided included landowner contact and consent, budget preparation, basic engineering and reclamation design, cultural resource evaluation, NCP plans, bid document preparation, contract administration, quantity accounting, full time construction/reclamation inspection and final report preparation and project close-out.

NOTE: Several additional sites had engineering completed within the area (included under Design Engineering Cost above) which were dropped from the bid package after the landowner withdrew their initial consent.